Vol. XVI

NEW

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THE NEW SCHOLASTICISM

APRIL 1942

THE
NEW SCHOLASTICISM
A Quarterly Review of Philosophy

Volume XVI APRIL, 1942 Number 2

THE TERM "BEING"

IN THE present paper it is proposed to discuss the following question: When the term "being" is applied to God and a creature, has it two meanings which are partly similar and partly different? The term "being" is said to be applied to God when the word "God" is the subject of an affirmative proposition and the term "being" is the predicate. In the statement of the question the word "similar" is employed rather than "same" because "same" is ambiguous. The word "different" implies plurality, and the opposite of "different" is expressed unambiguously by the word "similar." The word "same," on account of its ambiguity, and the word "being," on account of the way it has been used, have brought more confusion into philosophy than any other words in human speech. This discussion will not only have an application to certain matters which are in dispute among the scholastics; it will also have a direct and important bearing on several arguments of the pantheists. Its bearing on the pantheistic arguments will be apparent as we proceed and will, in consequence, receive only a brief formal notice.

Before proceeding to a discussion of the question we should call attention to three or four points which will help to forestall a misunderstanding.

1. The term "being," like the term "thing" or "rational being," is a general concrete term with a singular and a plural, though it is sometimes used like an abstract term, as in the expression, "the being of God," which is grammatically parallel to "the infinity of God." The word "concrete" is here used in the sense in which the grammars use it when they contrast a concrete with an abstract noun; thus, they call "villain" a concrete, and "villainy" an abstract noun. When what is signified by the term "being" is abstracted or prescinded from what is signified by "infinite," "finite," "substantial," etc., the term "being" still remains what the grammars call a concrete noun or term.

2. The term "being" is not perfectly synonymous with the word "thing." When "being" is used as a concrete term, it may be replaced by "thing" in any context, but "thing" cannot always be replaced by "being" or "entity" or "object." For example, in the propositions, "Everything I learned about the man was interesting," "He told me an amusing thing about his teacher," we cannot substitute "being" or "entity" for "thing." The word "thing" in these two propositions would be translated into Latin by "quidquid" or "aliquid," not by "ens" or "res."

3. If it is claimed that a certain doctrine connected with the term "being" leads to pantheism, this claim, if it is to have any weight, must be proved and not merely asserted. If any pantheistic argument resting upon the term "being" seems to possess any plausibility (and I have never encountered or heard of one), it will be because the argument overlooks the fact that "being" is a general concrete term with a singular and a plural, and therefore, when it is used in the predicate position in the singular, it should, like the term "rational being," be preceded by the indefinite article.

4. The term "being," the idea, the material object and the formal object of the idea must be kept separate and never con-

fused in an argument. It is plain that if this precaution is not observed, it will be easy to reach contradictory conclusions from what are apparently the same premises. By an object is meant that which is or can be contemplated, i. e., that to which attention may be directed. The material object of an idea is the object *which* is contemplated, and the formal object is the object *so far as* it is contemplated. If we are thinking about a particular dog whose name is Rover, the material object in a given case will be Rover or the animal *which* is Rover, and the formal object will be Rover *so far as* he is an animal. The animal *which* is Rover differs from other animals, but Rover *so far as* he is an animal does not. In the case which is before us, if we are thinking about Jones, the material object will be Jones or the being *which* is Jones, and the formal object will be Jones *so far as* he is a being. A general concrete term stands for an object only so far as the term is intended to direct attention to that object. If there is a house with a flat roof, the term "house" directs attention to it only so far as it is a house. This house differs from a house with a pointed roof, but the first house does not differ from the second so far as they are both signified by the term "house." In other words, the house *which* has a flat roof differs from the house *which* has a pointed roof, but they do not differ from each other *so far as* they are houses.

If God and a creature are partly similar and partly different so far as they are signified by the term "being," what part of the meaning of the term "being" brings out the aspect in which God and a creature are similar, and what part the aspect in which they are different? The term "being" is the simplest of all concrete terms; that is, when it is applied to a subject, it expresses less than any other term except one of its synonyms, and therefore, its meaning cannot be divided into parts which may be expressed by terms that are simpler than "being."

The two terms "sentient organism" and "non-sentient organ-

ism" have two meanings which are partly similar and partly different. The meanings are similar so far as they are expressed by "organism" in both cases; they are different so far as they are expressed by "sentient" in the one case and by "non-sentient" in the other. In like manner, the two terms "infinite being" and "finite being" have two meanings which are partly similar and partly different. The meanings are similar so far as they are expressed by "being" in both cases; they are different so far as they are expressed by "infinite" in the one case and by "finite" in the other.

Suppose that I am talking about two objects, which I call A and B, and that I say "A is a being" and "B is a being"; will the term "being" in the second proposition have a different sense for the man I am talking to from what it has in the first? Suppose, then, I say that the object denoted by B is God; will the man immediately interpret the term "being" in a different sense from the one in which he interpreted it when he heard me say "B is a being"? And if he does not interpret it in a different sense, will he be attaching a false sense to the proposition, "God is a being"?

Must a man know that God is infinite in order to understand and accept the proposition, "God is a being"? Do we not have to know that God is a being *before* we attempt to prove that He is infinite? And after we have proved that He is infinite, does the term "being" change its meaning in the proposition, "God is a being"?

A man who understands the meaning of the word "repenting," as it is applied to a creature, and who already knows that God is infinitely perfect will be apt to be puzzled when he reads for the first time in the Old Testament that God repented of having created man. The term "repenting," as applied to a creature, implies an imperfection, and hence it cannot be applied to God in the full sense it has when applied to a creature: that sense will have to be modified. The term "repenting," there-

fore, as applied to God and a creature, has two meanings which are partly similar and partly different. If the man does not know that God is infinitely perfect and if he accepts the proposition, "God is repenting," in the sense in which "repenting" is appropriately applied to a creature, he is accepting a false proposition. On the other hand, if the man does not know that God is infinitely perfect and nevertheless accepts the proposition, "God is a being," in the sense in which "being" is applied to a creature, he is *not* accepting a false proposition; for a man must know that God is a being before he can know, or, at least, before he can prove, that God is infinitely perfect. The term "being," as applied to a creature, does not imply an imperfection. It is the being *which* is a creature, not the creature *so far as it is a being*, that is imperfect; and the term "being" stands for the creature only so far as it is a being.

We must know more about God than the fact that He is a being in order to know that He is infinite. We cannot prove that He is infinite from the fact that He is a being, but we could prove it in this way if the fact that He is a being implied that He is infinite. In the proposition, "God is a being," all that we are told about God is that He is a being. A proposition conveys only so much information about its subject as is expressed by the predicate. The subject is not intended to convey any information about the predicate; if it were intended to do so, then from the proposition, "All birds are animals," we should know that all animals that are birds are feathered.

The meaning of the predicate term is in no way derived from the subject. The predicate term had its own meaning before it was applied to the subject, and that meaning must be known to us before we see the term applied; otherwise the term will give us no information about the subject. In fact, without a previous knowledge of the meaning of the term we cannot even understand the proposition in which the term is used. All that the subject does for us is to let us know in certain

cases whether the predicate is or is not consistent with the subject. If the predicate term is seen to be inconsistent with the subject in an affirmative proposition, we know that the proposition is false. But if an ambiguous term is applied to a subject and all the meanings of the term are consistent with the subject as the subject is known to us, the subject does not tell us which of these meanings is the right one. If someone says "Brown is a story-teller," does this mean that Brown is a liar or that he is a relater of tales? We cannot decide unless we know whether Brown is an upright man, and we have to ask for further information, that is, for another predicate. When a general term is applied to a subject, we do not look at the subject to learn what the term means; we appeal to *convention*, for it is convention which has affixed the meaning to the term; and the term has this meaning no matter what the subject may be to which it is applied. Consequently, we do not know that God is infinite from the fact that we know the meaning of the predicate term in the proposition, "God is a being"; we know that He is infinite because we know more about God than the fact that He is a being.

All terms are conventional signs, i. e., they have acquired their meaning from agreement among those who employ them. They do not get any part of their meaning from the subject to which they are applied. This is true even in the case of the ambiguous term. The subject will often tell us which of the various meanings of an ambiguous term is the appropriate one or the one which is intended, but it does not itself add anything to the meaning of the term. If a man says "Paul Smith is a page," we know the man does not mean that Paul Smith is part of a book, but that he is a messenger boy. The meaning, "messenger boy," was not conferred on the term "page" by the subject "Paul Smith"; the term "page" had that meaning before it was applied to Paul Smith.

If in any case part of the meaning of the predicate term

were derived from the subject, the proposition would be to that extent tautological and to that extent it would not convey any information about the subject. The proposition, "A rational animal is rational," does not convey any information about its subject. When we are gaining information about a given subject, the subject does not determine the meaning of the terms which are predicated of it, but in certain cases it determines what shall not be predicated; and it would not do even as much as this unless we had gained other information about the subject, and we gained that other information by attaching predicates to the subject.

We say "God is a being and St. Paul is a being," and this is the same as saying "God and St. Paul are beings." But suppose that in "God is a being" the word "being" meant "infinite being," and that in "St. Paul is a being" the word "being" meant "finite being"; what would be the meaning of the word "beings" in the proposition, "God and St. Paul are beings"? A term cannot be used correctly in the plural unless its meaning is unchanged with reference to all the objects to which it is applied.

If the term "being," as applied to God, means "infinite being" and if, as applied to a creature, it means "finite being," then we are not prescinding from both "infinite" and "finite" when we apply the term "being" alone. Certainly when we apply the term "organism" alone, we prescind from both "sentient" and "non-sentient." Sometimes it is said that "being" prescinds from "infinite" and "finite" only by an imperfect or inadequate prescission, so that it implicitly or obscurely contains the "modes" infinite and finite. It is to be observed that neither the term "being" nor its meaning does the prescinding; the prescinding is done by the person who uses the term. "Prescinding" means "leaving something out of thought"; hence, "imperfectly or inadequately prescinding" means "imperfectly or inadequately leaving something out of

thought." And what does this mean? Surely no one would maintain that we partly leave and partly do not leave something out of thought. However, the expression "imperfect or inadequate prescission" is probably intended to mean that there is only one side to the prescission; that is, that while we may think of an object as a being without thinking of it as such and such, we cannot think of it as such and such without thinking of it as a being. Later in this paper we shall have a word to say about what are called the implications of the term "being."

When it is said that the being of God differs from the being of a creature, this is parallel to the statement that the organism of a horse differs from the organism of a tree; and this is merely another way of saying that God is a different *kind* of being from a creature and a horse is a different kind of organism from a tree. But to bring out the difference between God and a creature we shall have to employ another word besides "being," just as we have to employ another word besides "organism" to bring out the difference between a horse and a tree. Again, the organism *which* is a horse differs from the organism which is a tree, but the horse *so far as* it is an organism does not differ from the tree so far as it is an organism. Similarly, the being *which* is God differs from the being which is a creature, but God *so far as* He is a being does not differ from the creature so far as it is a being.

If we must necessarily employ another word besides "being" in order to bring out the difference between God and a creature, this shows that the difference is not expressed by the term "being," and therefore, the term "being," as applied to God and a creature, has *not* two meanings which are partly similar and partly different. If we put aside the ambiguous term and such terms as "class" and "sort," there is no general term whatever that indicates any difference in the objects for which it stands. That is precisely what constitutes it a general term.

Even the term "class" merely indicates that there *is* a difference, but not what the difference is. What the difference is must be expressed by another word.

To say that a man is an animal and a horse is an animal is not to place a horse on a level with a man unless to call a horse an animal is to imply that a horse is the same kind of animal as a man. In like manner, we are not placing a creature on a level with God by calling them both beings unless, by calling a creature a being, we imply that a creature is the same kind of being as God.

If, without a change in the sense of the word "animal," we say that an elephant is an animal and that a worm is an animal, we do not imply that an elephant and a worm are animals of the same kind. Similarly, if, without a change in the sense of the word "being," we say that God is a being and that a creature is a being, we do not imply that God and a creature are beings of the same kind. If we know that an elephant is an animal, we know that an elephant is a kind of animal, but the word "animal" does not tell us what kind of animal the elephant is. It is our knowledge of God, not our knowledge of the meaning of the word "being," that tells us what kind of being God is.

We cannot pack into the meaning of the term "being" the meaning of all the terms we have found necessary and appropriate to describe the nature of God. If a man said "God is a finite being," his *statement* would be wrong. If he said "God is a being," but believed that God is finite, his *belief* would be wrong, but his *statement* would not be wrong. His belief would be wrong, not because he put a wrong interpretation on the word "being," but because he put a wrong interpretation on the word "God." If a man said "An elephant is an animal" but thought that an elephant was a fish, he would be wrong, because he attached a wrong meaning to the word "elephant," not because he attached a wrong meaning to the word "animal." A man

can be right in some of his statements concerning God and wrong in others.

Even if a man were to hold that God and a creature are beings of the same kind, he would not be a pantheist, though he might be a polytheist or an atheist. Two horses are animals of the same kind, yet they are *two* animals, not one. If a man held that God and a creature are *beings* of the same kind, he would thereby be holding that God and a creature are not one being, but two; and in order to be a pantheist, he would have to hold that God and a creature are one being.

It is difficult to see how anyone could use the analogy of the term "being" to disprove the position of the pantheists without being involved in a vicious circle. Every attempt to prove that the term "being" is analogous with reference to God and a creature is based on the assumption, or rather, on the fact, that God and a creature are two distinct beings. Now if a philosopher were to employ the analogy of the term "being" to disprove the position of the pantheists, he would be saying that this analogy shows that God and a creature are not one being, but two. In their rejoinder the pantheists would deny what the philosopher assumed in attempting to prove the analogy of the term "being," namely, that God and a creature are two distinct beings.

We often meet the statement that a creature both resembles and differs from God in being; but we need to be told what is meant by the expression "in being" before we can accept the statement. One object A resembles or differs from another object B by virtue of what A *is* and what B *is*, that is, by virtue of what can be truly said of A and B. The only way of bringing out how A resembles or differs from B is by indicating what A and B *are*. John Cook Wilson said that red both resembles and differs from blue in color, because red and blue are nothing else but color; and hence, if red resembles blue, it must resemble blue in color; and if it differs from blue, it must differ from

blue in color. But what is the meaning of "in color"? Expressions like "in being," "in color" and "in animality," because they are abstract, are continually open to misinterpretation by the philosopher. If we take "in color" as meaning "so far as (*or* in that) it is a color," then red resembles blue so far as (*or* in that) it is a color, but it does not *differ* from blue so far as (*or* in that) it is a color. Red differs from blue so far as (*or* in that) it is *such* a color. In like manner, we must interpret "in being" as "so far as (*or* in that) it is a being." A creature resembles God, but it does not differ from Him so far as (*or* in that) it is a being; it differs from God so far as (*or* in that) it is *such* a being. That it is such a being must be indicated by another word besides "being." Every animal is an organism, and therefore, not a single animal is differentiated from any other animal by the fact that it is an organism, but by the fact that it is *such* an organism. In like manner, every object whatever is a being, and therefore, not a single object is differentiated from any other object by the fact that it is a being, but by the fact that it is *such* a being.

It is not correct to say that every object that is is being, any more than it is correct to say that every citizen is human being. Every citizen is *a* human being and every object that is is *a* being. Jones and Smith are not human being; they are human beings. Similarly, Jones and Smith are not being; they are *beings*. It is inaccurate and misleading to say that there is nothing except being. The term "being," like the word "thing," is a *general* term with a singular and a plural, and therefore, when it occurs in the predicate position of a proposition, it should be used in the plural or in the singular with the indefinite article preceding it. It would be more accurate to say that there is nothing except *a* being or nothing except beings. But even this would be a false statement if it were interpreted as meaning that nothing could be said about anything except that it is a being. Again, we should not say that A is either being or

nothing; we should say that A is either *a* being or nothing; or still better: A is either a being or not a being, just as we say the animal is either a dog or not a dog.

We do not add being to being in order to get rational being; we do not add the *word* "being" to the word "being"; this would give us "being being." We add the *word* "rational" to the word "being" to get the *term* "rational being"; but we do not literally add anything to the object which is denoted by the term "being" in order to contemplate it as a rational being. We leave the object alone and merely observe more about it than the fact that it is a being, and thus we contemplate it as a rational being. It may be asked, But is not the "more" which is observed also being? There are two remarks to be made in answer to this question. First, the question is incorrectly worded. It is like the question, Is not Jones human being? The correct wording of the question is, Is not the "more" which is observed also *a* being? If the "more" were also a being, then the "more" and the being we were talking about would be two beings, whereas we were talking about only one being, and that being turned out to be a rational being. Secondly, it is to be noticed that the expression is "more about" and not simply "more." "More about" could be changed to "another thing about," but not to "another being about." As was noted in the fourth paragraph of this paper, the word "being" is not a synonym for "thing" in every context. The term "being," when used in the plural or with the indefinite article, always stands for an object, but this is not the case with the word "thing." The words "thing" and "more," when used along with the word "about," stand for what is expressed by the copula and predicate of a proposition, and the copula and predicate do not stand for an object, and therefore, neither do they stand for a being. If a man knows that the sun is self-luminous, he knows something about the sun. The *thing* he knows *about* the sun is expressed by the words "is self-

luminous," and these words do not stand for an object or a being.

The expression, "being as such," never occurs in the predicate position of a proposition when the subject stands for one object; thus, we never say "Jones is being as such" or "Jones is man as such." Consequently, what is *expressed* by the words "being as such" is never predicated of one object. Such expressions as "being as such" and "man as such" are short for "every being, so far as (*or* by the very fact that) it is a being," etc. "Being as such is one" is short for "Every being, by the very fact that it is a being, is one." "Man as such is a social being" is short for "Every man, by the very fact that he is a man, is a social being"; that is, we need not look beyond the fact that an individual is a man in order to determine that he is a social being. It will be observed that we are dealing here with the *expression*, i. e., the *words* "being as such." We are speaking of the use, or rather, the misuse, which philosophers have made of such expressions as "being as such" and "man as such." The correct use of such expressions is not determined by the arbitrary decree of the philosopher, but by the practice of good writers of the language. Outside the usage of certain philosophers, such expressions as "being as such," "man as such" and "a clock as such" have the force which has just been indicated. Thus, A clock as such is an instrument (*or* Clocks as such are instruments) for telling time" has the meaning of "Every clock, by the very fact that it is a clock, is an instrument for telling time." Philosophers, by their misuse of the common phrases of speech, have brought mystery, confusion and darkness into the questions they discuss. It should be remarked that it is an accident of language that the word "man" is often used in the singular without the indefinite article where other concrete nouns are used in the plural or with the indefinite article. People say "Man is rational," but they do not say "Child is rational" or "Circle is round" or "Clock is an instrument for telling time." They speak of "the duties of

man," but not of "the duties of child." However, when they employ "man" in the predicate position of a proposition, they do not say "James is man" or "James and William are man."

It is not uncommon for a text-book to put forth a statement to the following effect: "The term 'being' signifies the four primary modes of being, viz., infinite, finite, substantial and accidental, though it signifies these modes implicitly." The very same argument by which the text-book attempts to prove that the term "being" signifies the four primary modes may be employed to prove that the term "being" signifies all modes whatever. For example: "'Four-footed' is either being or nothing: obviously it is not nothing; therefore it is being. Consequently, the term 'being' signifies 'four-footed,' though it signifies this mode implicitly. Therefore, when the term 'being' is applied to a horse, it signifies 'four-footed.'" Does the term "being" drop this signification when it is applied to God and a man? How can a term drop any of the signification which it necessarily has even though that signification is implicit? It may be objected that the term "being" stands for the whole object to which it is applied and not for a part of the object. But this is true, not only of the term "being," but of every general concrete term. In the proposition, "Peter is a man," the term "man" stands for the whole Peter, not for a part of him. It is true that the term "man" does not signify everything that can be said about Peter, but then what is said about Peter is never a part of him. A term which signifies only a part of Peter cannot be used correctly in the predicate position of an affirmative proposition in which Peter is the subject. Thus, it would be wrong to say "Peter is a spinal column" or "Peter is a left ear." Every general concrete term stands for the whole object to which it is applied, though it does not *describe* the object exhaustively. While a general concrete term in the predicate position stands for the whole object which is the subject, it describes the subject only to the

extent of the meaning or connotation which convention has attached to the term.

Consider the following syllogism: "Everything that exists is a being; God exists; Therefore God is a being." Has the term "being" a different meaning in the conclusion from what it has in the major premise? If it has, the syllogism has four terms, and hence is invalid. We do not argue in this way: "Everything endowed with sensation is an animal; A horse is endowed with sensation; Therefore a horse is a four-footed animal." Nor do we argue in this way: "Everything that exists is a being; God exists; Therefore God is an infinite being." When the term "animal" is applied to a horse, it directs our attention to an object that in fact is four-footed, but it does not *tell* us that the object is four-footed. Similarly, when the term "being" is applied to God, it directs our attention to an object that in fact is infinite, but it does not tell us that the object is infinite. The term "being" does not itself tell us whether the subject to which it is applied is infinite or finite, rational or irrational; we must examine the subject to find that out. The subject does not contribute anything to the meaning of the predicate. It is the function of the predicate to inform us about the subject, and it does this precisely to the extent of the meaning which it posesses in its own right, and this is determined by convention.

Exception may be taken to the syllogisms in the preceding paragraph as follows: "When 'being' is applied to God in the conclusion, a new term is not introduced. The term 'being' signifies 'infinite' obscurely and implicitly. Consequently, the term 'infinite being' in the conclusion is not really a fourth term, for it merely emphasizes what is already signified by the term 'being.'" In reply to this argument it is pertinent to inquire whether the term "being" in the major premise ("Everything that exists is a being") signifies "infinite being." If it does, the major premise is false; if it does not, then it does

not signify "infinite being" in the conclusion; otherwise we have four terms in the syllogism. Will it be said that the term "being" in the conclusion *implicitly* signifies "infinite"? Then it implicitly signifies "infinite" in the major premise. A term cannot have any implications in the conclusion which it did not have in the premises. A term in the conclusion cannot tell us any more than it told us in the premises, for it is from the premises that the conclusion gets the term. It is true that there is something *explicit* in the conclusion which was only implicit in the premises; but that holds not merely in the case of a syllogism which contains the term "being," but in the case of every valid syllogism whatever. What is explicit in the conclusion and implicit in the premises is, not the meaning of either of the terms, but the union of the two terms.

The objector may interpose a second time as follows: "There is a vast difference between the term 'being' in the first syllogism and the terms 'animal' and 'four-footed' in the second. 'Animal' and 'being' are not parallel. 'Animal' does not signify 'four-footed' even obscurely. It prescinds adequately from 'four-footed.' 'Being,' however, does signify 'infinite' obscurely and implicitly; for it prescinds from the modes 'infinite' and 'finite' only by an imperfect or inadequate prescission." Let us, then, put the matter in this way: Does "being" prescind adequately or inadequately from "four-footed" and "sentient"? And does it or does it not implicitly signify "four-footed" and "sentient"? Take the following syllogism: "Everything found on the earth is a being; A horse is found on the earth; Therefore a horse is a four-footed sentient being." On the principle of inadequate or imperfect prescission, as it is commonly expounded, the foregoing premises warrant the conclusion that a horse is a four-footed sentient being. It matters nothing to the force of the argument whether we call a horse a four-footed sentient being or a four-footed animal. This point may be put in another way as follows:

When we say that a horse is an animal, we imply that it is a being, for "animal" implies "being"; and if "animal" implies "being," it implies what "being" implies. The question, then, is this: Does "being" imply "four-footed" or does it not? If it does, then to say that a horse is an animal is to imply that it is a four-footed animal. If "being" does not imply "four-footed" in spite of the fact that it prescinds inadequately from "four-footed," how can it be maintained that "being" implies "infinite" on the ground that "being" prescinds inadequately from "infinite"?

Will it be contended that it is our knowledge of the nature of God, and not convention, which determines the meaning of the terms we apply to God? Will it be said that, unless a man knows the complete nature of God, he cannot intelligently apply the term "being" to God? If this were true, we never could *prove* that God is infinite, and the only way we could know that He is infinite would be by intuition or Revelation. An object must necessarily be a being in order to be infinite, but it does not have to be infinite in order to be a being; and even if it *is* infinite, a man does not have to *know* that it is infinite in order to be right in saying that it is a being. How are we going to prove to a man that God is infinite if we insist on telling the man that he is wrong in saying that God is a being unless by "being" he means "infinite being"? Everything we know about the nature of God we have learned by attaching predicates to the subject "God"; at least, this is the way we give expression in words to what we learn. It is the predicates which explain the nature of God, not the nature of God which explains the predicates. After we have learned the nature of God, our knowledge of His nature cannot cancel or alter the meaning of the predicates by which we acquired that knowledge. We had to have a knowledge of the meaning of the predicates before they could give us any information about the nature of God. Of course, when once we have learned that God is infinitely perfect, we

know there are certain terms which cannot be applied to God in the full sense they have when applied to a creature, because, as applied to a creature, they imply an imperfection. But suppose that, in the process of the proof that God is infinite, all the terms we applied to God implied an imperfection; then the conclusion would be that there is an imperfection in God.

The question has been asked "Are the modes of being, being or not? If they are not, what are they?" Two or three times in the course of this paper attention has been called to the fact that the term "being" has a singular and a plural. The question "Are the modes being or not?" is like the question "Are horses animal or not?" or "Are men rational being or not?" The question should read: "Are the modes *beings* or not?" If the word were "thing" instead of "being," the question would hardly be asked "Are the modes of thing, thing or not?" The modes of a being are not beings; they are *facts* or *things* that may be learned *about* that being. We do not learn beings about a being. The facts or things that we learn about a being are expressed by the copula and predicate of the propositions in which that being is the subject. Thus, we have learned two things or facts about Chicago, viz., Chicago is a city and Chicago is situated on Lake Michigan. The words, "is a city" (like the words, "a fact about," or "something about"), when considered apart from a subject, do not stand for anything nor do they express anything; when attached to the subject "Chicago," they express a fact or a thing (but not a being) about Chicago.

There is one final remark to be made on the subject of the present discussion. The law of contradiction reads thus: "Nothing can at the same time and in the same respect be and not be." A creature cannot at the same time and in the same respect be and not be similar to God. A creature is similar to God so far as it is a being. Is it also true to say that a creature is *not* similar to God so far as it is a being? But it is not similar to God so far as it is a being if it *differs* from God so far as it is a

being. The law of contradiction is at the foundation of all our reasoning, and therefore, it is at the foundation of our reasoning concerning God. We are simply stultifying ourselves if we say that a creature is at the same time and in the same respect both similar and not similar to God.

We may now say a word about one of the arguments of the pantheists; but first let us illustrate the ambiguity of the words "same" and "identical." Like the word "cleave," "same" as well as "identical" has two nearly opposite meanings. At one moment it will mean one person or thing and *exclude* plurality; at another it will mean similar and *imply* plurality. If George and Peter are talking about Napoleon, we say the man they are talking about is the same, and we use "same" in the first sense; that is, the man George is talking about *is* the man Peter is talking about. If we say "These two dimes are the same" or "They are identical," we use "same" or "identical" in the second sense; that is, we mean that the dimes are exactly similar. We certainly do not mean that one of the dimes *is* the other dime. The opposite of "same" in the first sense is "distinct"; the opposite of "same" in the second sense is "different." To say that A and B are not distinct is to say that they are one object, not two. To say that A and B are not different is to say that they are similar.

No more important advice could be given to the student of philosophy than this: When you meet the word "same" or "identical" in the writings of the philosophers, ask yourself whether "similar" would not be the more appropriate word. If there is question of two or more objects, "similar" is the unambiguous word, not "same" or "identical."

In the pantheistic argument of David of Dinant the word "thing" is used instead of "being." The argument is summarized by Dr. Coffey in his *Ontology* (p. 125) somewhat as follows: "God and primary matter exist and do not differ; therefore they are identical: for if they differed they should

differ by something distinct from both, and this again should differ from both by something distinct from all three, and so on *ad infinitum*: which is absurd." This sort of argument, if it can be called an argument, might have any number of queer and astonishing applications; for example: "If an argument involving a *processus in infinitum* differed from a valid argument, the two should differ by something distinct from both, and this again should differ from both by something distinct from all three, and so on *ad infinitum*: which is absurd. Therefore, an argument involving a *processus in infinitum* is a valid argument; or if we prefer: A valid argument is an argument involving a *processus in infinitum*."

Even if this philosopher's premises were right, his conclusion would be wrong; that is, it would not follow from his premises. If two dimes do not differ from each other, it does not follow that they are one dime, but that they are *similar*; they still remain *two* dimes. When the philosopher draws the conclusion that God and primary matter are identical, he is using "identical" in the first of the two senses which were pointed out above; that is, he is using "identical" as meaning one person or thing and as excluding plurality. If his premises were true, all they would warrant him in concluding would be that God and primary matter are *similar*. But his premises are not true; they are the very reverse of true. In the nature of things, two objects cannot differ by something which is distinct from both, that is, by something which neither of them is. A man and a horse are neither of them a fish. Do they, therefore, differ by a fish? Or by anything else that neither of them is? They may indeed differ by reason of a relation which one of them bears to a fish and the other to something else. Thus, Jones is a fish-eating animal, and a horse is not a fish-eating, but a grass-eating animal. Hence the two differ by the fact that one is a fish-eating, and the other a grass-eating animal. But the fish-eating

animal is not distinct from Jones, nor is the grass-eating animal distinct from the horse.

Such expressions as "by something," "in something," "in color" and the like are in continual use in our daily speech and we should find it exceedingly inconvenient to do without them. It is the philosopher, and not the common man, who is fooled by the phrases of everyday speech. The philosopher, moreover, invents a technical vocabulary of his own and afterwards employs it without reference to its original purpose, and thus he is fooled again, this time by his own invention. It is chiefly in this way that he obtains his problems and paradoxes and gets himself into a muddle. The short convenient expressions, "in something," "by something," "in being" and the like cannot be dispensed with in ordinary speech, but they have been so wildly misconstrued by the philosopher that we are obliged to explain them by other expressions—expressions which even the philosopher will find it hard to misinterpret. When we meet such an expression as "A differs from B by (*or* in) this or that," we shall be wise to interpret it by some such expression as "A differs from B as follows (*or* as far as this): A is such and such, whereas B is not such as A, but is other such and such." We shall require more than a single phrase if the difference between A and B is to be accurately and literally expressed; we shall require at least two *propositions* or a compound proposition. A will be the subject of one of these propositions and B will be the subject of the other. The difference will then be expressed by the combination of the copula and predicate in the two propositions; and, as has already been remarked, the copula and predicate do not stand for a being; they express *something about* the subject. Thus, we have not discovered many *beings* in God, but we have discovered many *things about* God, and the things we have discovered about God are expressed by the copula and predicate. No object whatever is outside the *denotation* or ex-

tension of the term "being," and therefore, every object is a being. What is outside the *connotation* or comprehension of the term "being," but is part of the connotation of another term, is not a being, but a *thing* that may be discovered *about* a being. Hence, if we consider the word "thing" in its widest use, we may say that everything whatever is either a thing that is a being or a thing that may be discovered about a being.

In conclusion, it should be observed that in this paper we have been discussing the *term* "being," and we have been speaking about this term as *applied* to God and a creature, that is, as occupying the predicate position of an affirmative proposition. Both of the terms "God" and "creature" are concrete, and therefore, the term "being," as applied to God and a creature, is also concrete. We cannot without ellipsis or metaphor employ an abstract term in the predicate position of an affirmative proposition when the subject is a concrete term; thus, we do not say "A horse is animality." The proposition, "God is love," is either a figurative or a shorthand expression. According to the context, it will have one or both of the following interpretations: (1) "God is all-loving or infinitely loving"; (2) "God is all-lovable or infinitely lovable." Hence, the term "being," as applied to God and a creature, is first of all a *concrete* term. Secondly, since it is applied separately to many objects, it is a *general* term. Thirdly, it is a term *with a singular and a plural.* Now when a general concrete term with a singular and a plural is applied without ellipsis or metaphor to one object or to many objects separately, it is either preceded by the indefinite article or it is used in the plural. Thus, we never encounter such an expression as "This bird is lark" or "That animal is horse." When a general concrete term is used in the plural, it emphasizes the *distinctness* of the objects for which it stands; when it is used in the singular with the indefinite article, it emphasizes the distinctness of one of those objects from the remaining objects. The pantheist will not admit that any objects are

distinct from each other, and in order to impart an air of plausibility to his position, he insists upon using the term "being" in the singular without the indefinite article; and then, to add to the mystery and solemnity of his words, he adorns the term "being" with a capital B. In the present discussion we have been speaking about the term "being" as it occurs in the predicate position of an affirmative proposition, and in this position, when used correctly, it always occurs as "a being" or as "beings." Consequently, since we have been dealing here with the term "being," as applied to God and a creature, any discussion of this term which is not directed towards its use in the plural or its use with the indefinite article is either misleading or it is irrelevant to the subject of this paper.

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PHILOSOPHY AND SCIENCE

THIS question of the relation of Philosophy and Science is a particularly modern and, I may say, a contemporary problem. By that I mean it reached a stage of acute discussion in the 19th and 20th centuries both among scientists and philosophers. It needs to reach a point of greater discussion among scholastic philosophers at the present time.

To understand this problem of the relation of philosophy and science at least the high points of the history of this relation must be noted. I shall limit this paper to the question of Physics and philosophy.

First of all, science and philosophy [1] did not from the beginning have the same connotation they have today. For Aristotle and the ancients it was philosophy that gave the orientation to the meaning of the term science and though philosophy as a knowledge through causes can and ought to be termed a science yet Aristotle though he was a physicist and even more a naturalist, when he was not a logician and a philosopher, theoretically did not in any precise fashion explain how the term science with its philosophical meaning could be used to cover knowledge of things that were vastly dissimilar to strictly philosophical knowledge. As we would say today, the problem of the difference between a philosophical explanation and a purely scientific explanation of any part of the material world was not specifically studied by him. The main reason for this was the fact that the science of his day had not reached sufficient development. What is said of Aristotle on this point can also be said to some extent of Thomistic philosophy. There are indications especially in the Commentary on De Caelo et Mundo [2] that St.

[1] J. Maritain, *Les degrés du Savoir* (Paris: Desclée de Brouwer et Cie, 1932), p. 46.

[2] St. Thomas, *Comm. De Caelo et Mundo*, Lib. II, Lect. XVII.

Thomas saw further than Aristotle when he remarks that the hypotheses of the astronomers need not necessarily be true but are useful to save the sensible appearances. But St. Thomas himself was even less of a scientist than Aristotle. Yet we can find in him principles for the formation of a philosophy of nature and suggestions as to the distinction of philosophy and science as we see it today.

Today the word science connotes not philosophy but rather positive science, science of nature or of phenomena. And we have the sharp opposition of science and philosophy. We cannot without much misunderstanding neglect the ancient and modern meaning and it is in reference to the modern meaning that we pose the question of the relation of philosophy and science even though the juxtaposition implying that philosophy is not a science is not a really happy one as it can warp our view of the unity of reality and our knowledge of it. But with this in mind we can see a very necessary distinction that those words imply.

In the last of the Renaissance and the beginning of modern times there is something more than a return to ancient ideas. Besides a development of mathematics there is a growing interest in nature and in the empirical investigation of it as well as an insight into the possible connection between mathematics and physical phenomena. From Leonardo da Vinci to Francis Bacon, Gallileo, Descartes, Pascal to Newton we see slowly emerging the fact of an experimental, mathematical physics. That, one might say, is a very rough pencil sketch of a tremendous development.

Let us begin with the seventeenth century because since the Cartesian synthesis has had such a tremendous influence on modern thought this will help us to understand the various ways this problem of philosophy and science has been posed.

The seventeenth century, through Descartes as well as Bacon, gives voice to the cry for order and method—the order and

method of each were diametrically opposed: Descartes stressing the order of mathematics while Bacon insists on pure induction yet both were to have an influence on modern science. Descartes, however, since his method became his science, is more important; while Bacon's influence seems exerted indirectly through Newton.

What then is Descartes' method, his universal method, and what does it imply as regards the relations of philosophy and science? Descartes, even in his college days, was interested in the character of mathematics. As M. Gilson points out,[3] in those days he read in Clavius that,

> The mathematical disciplines demonstrate and justify by the most solid reasons everything they may call for discussion, so that they truly beget science in, and completely drive out all doubt from, the mind of the student.

Here then we have the clearness and certitude of mathematics stressed. On the other hand we find him not uninfluenced by, but certainly unimpressed by the scholastic philosophy presented to him. Another influence was the powerful one of the scepticism of Montaigne. We know from Descartes' *Discours* that he knew the Essays well, but more than that, this scepticism impregnated the society of his time. Certitude, therefore, was a very living problem in his day.

After leaving college, we know he met Beeckman who not only stimulated further his interest in pure mathematics but also its relation to physical questions. Descartes' great mathematical discovery was Analytical Geometry. By it he showed that the geometry of the ancients built up of figures constructed by means of the ruler and compass could be studied and further developed by algebraic analysis alone. It then followed he could study mathematically the properties of extension and space. And lastly, if matter was seen as reducible to extension, physics could

[3] Et. Gilson, *René Descartes, Discours de la Méthode, Texte et Commentaire* (Paris: Vrin, 1930) p. 128.

be built on mathematics.[4] Thus the mathematical point of view becomes the universal method of studying the universe, for all spatial relations could be translated mathematically and algebra, without even considering geometry as such, would be the sufficient and necessary means of expressing all these relations.[5]

But the important point to note here is that the universal science could not be conceived without conceiving the essence of matter as extension. From the very beginning of Cartesian thought we have seen that clearness and distinctness of mathematical notions appeals to Descartes. This was to him the mark of truth, of intelligibility. Philosophically this is founded in his intuition of existing thought with its clear and distinct ideas. The nature of soul was summed up in the idea—Thought. "The nature of bodies consists in that alone that it is a substance which has extension, in length, breadth and thickness."[6] The distinction of thought and extension is mathematically clear. Actually such a metaphysics does not necessarily flow from a mathematical physics. In Descartes it arose from seeing all intelligibility in the light of mathematical intelligibility—and since from his very starting point he was enclosed in thought and must go from thought to existence, thus it is not experience but his metaphysics that is the justification of his mathematical physics—as M. Gilson clearly states:

"It cannot be admitted that the physico-mathematics contained the sufficient reason of the Cartesian metaphysics but on the contrary it must be said that only that metaphysics could really permit Descartes to transform the physico-mathematics into a physics, or, as he says, into a Philosophy."[7] In other

[4] A. Rey, *L'Esprit de la science et les methods scientifiques des origines au XIX siècle.* Cours professé à la Fac. des Lettres de Paris. Fasc. III. (Paris: Librairie Classique R. Guillon, 1929-30).

[5] *Ibid.*, p. 88

[6] Descartes, *Princ. Phil.*, Ed. Adam and Tannery, I, 53, t. VIII, p. 25.

[7] Et. Gilson, *Études sur le école de la pensée médiévale dans la formation du système cartésian* (Paris: Vrin, 1930), p. 176.

words, his physics of the World, though not identical with his metaphysics, is yet a philosophy because the principles from which it grows are as deductions from his metaphysics. As there is thus a perfect continuity between his metaphysical principles and his physics, his physics is seen as a philosophy of nature and thus a notion of a distinction between philosophy and science has no reality on the physical level. There is only the distinction of metaphysics—a philosophy of thought and thought of God—and a physics that is considered as well a philosophy of nature:—for the essence of matter is extension and mechanical notion and its laws flow directly from his notion of God.

It is this inherent dependence of Descartes' physics upon thought; the implication that ideas had value for experience and, the universe could be directly penetrated by reason that brought about the accusation that Cartesian physics was an *A puriori* physics. It should be stressed it was not because he mathematized the physical but because, even though he himself had recourse to experience and urged it, for example, in the study of anatomy, his system cannot be said to stress its role.

Moreover, it is evident that Descartes posed not only a mathematical physics but an out and out mechanism—(portions of extension subject to the laws of motion according to the laws of mechanics) but what is more important is that he envisaged a universal mechanism as an explanation of all but thought. Thus his ideal was not only a mathematical, mechanical physics, but really an identification of all science with that. Thus there was to be *the* science and so his ideal of the unification of the sciences tended to identity.

Descartes' discovery of Analytical Geometry was epochal not only in the field of mathematics, but also in the development of physics. It probably made possible his great insight into a mathematical physics. It lead in its turn to further mathematical developments such as infinitesimal calculus which has become the indispensable tool in the handling of physical phen-

omena. He also gave a decided impetus to mechanism which remained the predominant theory to the end of the nineteenth century, though it did not remain exactly the mechanism of Descartes.

But certainly it cannot be said that the first of the moderns distinguished philosophy of nature and science. Actually they were more confounded than in Thomistic philosophy because scientific fact was unreservedly given an ontological value and the ontology of the physical real was reduced to science.

As I mentioned above, Descartes was thought by the more empirically minded scientists as being more *a priori* than most of the naive Aristotelian physicists he intended to oppose. Newtonian physics posed and is often today considered the exact opposite of the deductive Cartesian physics. To picture Newtonianism as pure empirical physics, or worse, a pure positivism, or even as embodying the modern concepts is somewhat of an exaggeration. First of all, it is true that Newton was much more a physicist than a philosopher. As a thinker he was influenced by the empiricism that stemmed from Bacon which explains his continual appeal to experience and the rejection of hypotheses. This rejection of hypotheses seems to be primarily, however, a rejection of the metaphysics of the Thought of Descartes. He does not take the viewpoint of thought but rather that the world is given of which we know little. There is not in the empirical school the implication that the knowledge of the world is a clarification of thought or reason, but rather that experience itself could furnish knowledge. He maintains the world is ordered but we must investigate it. However, experience for Newton is not pure description of phenomena. For him to know a thing experimentally was to measure it and as M. Rey points out he tries to make measure fit a mathematical order, in fact he tries to see the measure as a function of the law of universal gravitation.[8] Nor need it be pointed out

[8] A. Rey, *op. cit.*, p. 102.

that the universalization of the law of gravitation was an hypothesis or physical theory that seemed to explain both physical and astronomical phenomena very well. Moreover, this physics whose fundamental principle was the law of gravitation was also fundamentally mechanistic and for the working out of its calculations there are the suppositions of absolute space, time, motions and determinism. We also find axioms, as for example, mass equals density times volume. Now the question arises what significance was given these suppositions and definitions. Did, for example, the notion of mass have a purely physical significance gotten through a mathematical physical experiment? Or did the idea of mass replace the Cartesian essence of extension with the same ontological significance? Can we say that the notion of absolute space represented a useful framework for the laws of mechanics? Or an ontological reality upon which rested the laws of mechanics?

Newton himself continually insists that he does not present his physics as dependent on metaphysical principles and that, I think, means particularly not in the fashion of Descartes. But on the other hand, we find a certain oscillation in his thought, for example with respect to universal gravitation—not so much when he is dealing with it as a physicist but when he looks at it from the point of view of his religious mysticism.[9] From this point of view it takes on a philosophical meaning. Also in the Optics we see that he considers his physics as a basis for the proof of the existence of God and other philosophical questions.[10]

So we must conclude that though the inspiration of his physics is more empirical and truly physical than that of Descartes,—his philosophy being more a superstructure than an integral

[9] Helene Metzger, *Attraction universelle et Religion naturelle chez quelques commentateurs anglais de Newton.* Deuxième partie. Newton, Bentley, Weston, Tolland. Cahier V, Actualités scientifiques et industrielles (Paris: Hermann et Cie 1938), p. 66.

[10] Newton, *Optics,* Question 28.

part—there is however no clear conception of a science of the physical world as distinct from a philosophy of nature.

There is no doubt that many Newtonians presented his physics as a philosophy opposed to that of Descartes or Leibniz. And the physics of Newton overrode that of Descartes and Leibniz up to the beginning of the nineteenth century. We see through the following years that double point being accentuated.

Newtonian physics explained the problem of weight, rendered astronomy intelligible, also explained in a manner acceptable to experience many phenomena connected with light and heat. Through the law of Coulomb it was applied to electricity and magnetism and Laplace showed it could also be applied to capillarity. Thus the possibilities of Newton's theory seemed such that Laplace held that a physical phenomena is explained when it can be rendered according to the Newtonian formula.[11] And when Lagrange, at the end of the eighteenth century developed his analytical mechanics, which became the classical mechanics of the nineteenth century, he started with Newton. This mechanism was worked out algebraicly but starting with the laws of motion and as they were expressed in Newton's work. This analytical mechanics and a physics constructed entirely on this mechanics is for the nineteenth century *the* physics, in definitive form. All that need be done, felt the scientists, was the working out of this mechanism and nature would hold no more mysteries.

Moreover, Newton's great success in the field of physics and astronomy gave a great impetus to what Boutroux calls the theory of Bias which though inherent in the Cartesian stand was further developed after Newton. This theory supposes that given " an object which, in the condition in which it was presented could not be reduced to the condition of the science, one should not therefore renounce the possibility of studying it scientifically: it was a question of envisaging it from a certain

[11] A. Rey, *op. cit.*, p. 113.

bias or angle and, without entirely losing sight of it, it could be subjected to scientific treatment." [12] Thus, for example, after Newton an attempt was made to study chemical phenomena in the light of a theory analogous to the Newtonian mechanism with its principle of universal attraction. It was not very successful in Chemistry but the theory remained and we find mechanism used as a method for studying life, sensation, intellectual life, and even social phenomena. More often than not the idea of a *method* of study was not recognized or overlooked, and the whole reality of life and consciousness was reduced in most quarters in the nineteenth century to the mechanistic interpretation.

In the strictly philosophical field we have from Newton's time on the development of empiricism through Locke, Berkeley and Hume. This school constituted a powerful critique of rationalism—the metaphysics of clear and distinct ideas—which was at the time *the metaphysics.* But Kant also saw in the empiricism of Hume the undermining of the necessary character of science—mathematics included. Pure empiricism could in no sense be a justification of the great work of Newton and Kant, who was a philosopher educated in the rationalism of Leibniz and Wolff and also a scientist of the school of Newton, saw that a certain reconciliation of the necessity of rationalism with empiricism was the only way of justifying the necessary character of Newton's science of nature. For Kant this was the definitive physics.

After Kant's critique there is no longer a metaphysics of ideas, of thought, for thought is now only the condition of the possibility of objects as objects known. It is a unifying factor that unifies phenomena according to the various forms its unity can take in reference to the spatial and temporal manifold. Nature then is phenomena unified by the categories of consciousness, and phenomena in turn are qualitative impressions

[12] E. Boutroux, *La Nature et l'Esprit* (Paris: Vrin, 1926), p. 152.

unified by the forms of space and time. The thing-in-itself which impresses us has no intelligibility for us. It is we who establish the intelligibility and order of things though we are not the cause of their existence. A strange disjunction that makes the real as real unintelligible and therefore a philosophy of it impossible and at the same time forces us to view all reality from a physical mathematical viewpoint. We thus have not only the ruination of all metaphysics but also of a philosophy of nature and just as effectively as in Hume we are limited to experience but to an experience that is a product of the effect of the thing-in-itself and the synthetic power of the mind. We seem thus in the eighteenth century to have reached the triumph of science in the home of the philosopher. Philosophy was reduced to epistemology and to ethics.

Thus with the triumph of science with its ontological value and the ruination of philosophy the popular thought of the nineteenth century was as M. Abel Rey describes it. He says:

> There had been progress; there seemed to have been no gaps. The physicists gathered and condensed all the results of their predecessors in a simple, elegant and harmonious work. It was the logical continuation of the work undertaken by Galileo, and beyond Galileo from the time of Archimedes: for through rational mechanics and kinematics it is even linked with the wonderful construction of geometry. Nothing it seemed was to break this uniform movement that seemed to have an accelerated development in the same direction for centuries. Science had found the sole possible explanation of natural phenomena and that explanation was indeed an explanation in the total sense of the word. Mechanism supposed elements: material points and principles which established between the fundamental elements relations. Physics in clothing the mass and relations with concrete form, in realizing them in a certain manner, constructed the Universe as a geometrician constructs the figures in the definition he gives of it, or better yet, as the architect constructs a real edifice with real materials, and with real cement. The physicist had material elements, causes, and the manner in which they acted and the real laws of their actions. Nature was the complete result of the interactions of the very simple elements, accord-

ing to very simple laws. The imperfection of the science permits to subsist certain imprecise points, but no one doubted that this imprecision would gradually diminish.[13]

Thus we see that in the nineteenth century there was a very close linking of mechanics and physics and that the mechanistic theory as an all-inclusive theory for physical phenomena was looked on as translating the nature of the real. The theory with its ontological significance was also over-emphasized at the expense of the experimental side of physical science. Yet at the end of the nineteenth century and in stronger fashion at the beginning of the twentieth, we find a critique of science taking place by scientists themselves or by scientific philosophers.

This revaluation of the science of physics was due to various factors. Probably the most important was the inadequacy of the mechanistic theory to pose as an explanation of all physical phenomena. Physics considered as a pure development of mechanics began to be considered an arbitrary supposition both by theorists and science itself.

Secondly, there was an emphasis on experience made indirectly through Kant's criticism of rationalism and directly through his phenomenalization of the notion of cause, substance, etc., and even more directly by the current of empirical thought found both in England and France and which found its strongest—one might say its popular expression—in the work of Comte.

Thirdly, there existed the general spirit of critique and evaluation flowing from the Kantian train of thought.

And fourthly, there arose a hunger of the human intellect for something more than the materialism of the nineteenth century.

We can only touch to some extent on the first of these factors —the inadequacy of the mechanistic outlook of the nineteenth century from the point of view of the theorist and the scientist.

[13] *La Théorie de la Physique chez les physiciens contemporains* (Paris: Alcan, 1930), pp.16-17.

The inadequacies were first brought to the fore by certain discoveries regarding heat and we have the development of the school of energism. This school is important from our point of view because it was accompanied by a critique of the value of science. We find Rankine [14] noting that there are two parts in physics, the experimental part and the part that systematizes, or the general theory. Mechanism, he feels, has confounded the theory with experience. He strongly insists on experience and induction, but also admits an abstract generalization that has a representative value and allows for exposition, clarification, and also suggestion and discovery. He differs mostly from the previous stand in stressing the influence of experience in physics and in denying the ontological character of the figure hypotheses (or the notion of mechanism clothed in concrete form) of the classical mechanism. Mach and Ostwald [15] also reject the figure hypotheses with their ontological value and insist that mechanics cannot be the basis of all branches of physics. Mach, a positivist, insists on the role of experience and even takes the extreme position of saying that science considers not matter but only its relations which are algebraicly expressed. Theory also, he notes, has an important role; after a certain amount of experience, it replaces experience as a language or symbolism of the fewest number of terms. Economy of thought is the principle that rules the development of a theory.

One cannot say that these critics indicated in any positive way the role of philosophy for like the classical mechanists they considered scientific knowledge of the physical *the knowledge* of the real. But in helping to show that science was non-philosophical, in marking its positive character, and in showing the role of theory they helped to make possible a place for a philosophy of the real.

With the critique of Duhem, at the end of the nineteenth and the beginning of the twentieth centuries, we have not only a

[14] Cf. A. Rey, *ibid.*

[15] Cf. A. Rey, *ibid.*

criticism of the inadequacies of mechanism, an evaluation of the parts of science itself, but also an indication that the true character of science leaves a place for philosophy. Against the rabid positivists he strongly stresses the utility and necessity of theory. "A physical theory," he says, "is a symbolic construction of the human mind destined to give a representation, a synthesis, as complete, as simple, and as logical as possible to the laws which experience has discovered. . . . When a great number of these theoretical consequences represent with a close approximation a great number of experimental laws, the theory is a good one." [16]

The perfect theory would be the most concise mathematical representation guided solely by the principle of contradiction. Actually there are and can be many theories, for Duhem many different mathematical syntheses, all of which would have gaps, and all of which are relative to the experience synthetized—for further experience will force a change. Thus he says, "Contemporary physics is not a metaphysics, it does not propose to penetrate behind our perceptions to seize the essence or intimate nature of those perceptions. Its end is entirely different." [17] So he clearly rejects any philosophical significance, especially in the theory of Physics. But on the other hand, he recognizes that there are such questions as whether under sensible appearances there is a material reality and what is the nature of that reality. Whether such a manner is the best way of posing these questions may be left for the moment—the important point is that he has a recognition of a philosophy of nature beyond our scientific study of nature.

Duhem's own critique of science is criticised through the works of Poincaré.[18] They both agree in general outline that the science is positive in character; that it deals with phe-

[16] P. Duhem, "Les théories electrique de Maxwell," *Revue des questions scientifiques*, 20 janvier, 1901.

[17] P. Duhem, *Le mixte et la combinaison chimique*, pp. 202-205. Cf. A. Rey, *La théorie de la Physique*, p. 143.

[18] Cf. Poincaré, *La Science et l'Hypothèse* (Paris: Flammarion, 1932).

nomena; that one can distinguish three parts in science—fact, law and theory; that the laws are inductive in character; and are affected by the approximate character of measurement and lastly express relations between phenomena; that theory synthesizes these laws and allows therefore deduction of them from the theory and permits prediction of other phenomenal relations. The science seen from the theoretical viewpoint has a deductive character. Both stress the mathematical character of modern physics but whereas Duhem establishes an identity of nature between physical theory and mathematics, Poincaré stresses the specific character of physics. It was from his critique of mathematical knowledge that Poincaré took up his examination of physico-chemical theories and he contrasts sharply the almost independent and logical character of mathematics with respect to experience and the great dependence of physics upon experience. So no matter how mathematical the language of physics may be, it still has a physical significance that pure mathematics has not. This is, I think, a justifiable criticism of Duhem's position.

So at last we see Physics presented not as just a purely positive description of nature, but a positive, synthetic science having its own autonomy and a character that makes it neither a philosophy nor a branch of mathematics.

Of course, during this time science itself grew and introduced many new notions into the old mechanical theory. Besides the idea of energy that we have mentioned, there was Fresanl's theory of undulation to express light phenomena. This entailed the idea of an undulating milieu or ether. Later the electro-magnetic theory of Maxwell was developed. Then light and electro-magnetism were synthesised in one theory involving ether. At the end of the nineteenth century we have the constitution of the atoms in terms of electricity. But the difficulty of reconciling the vibrating atoms with the properties of ether caused questioning of the ether. Michelson and Morley tried

to determine our velocity with respect to the ether. They got a negative answer. Einstein accepted this as the negation of ether and eliminated the contradiction it presented by doing away with it and posed the relativity theory with its concept of field. In the domain of luminous and electrical phenomena, the quanta theory holds sway.[19] A point in each one of these theories rather forcibly shows us their non-philosophical significance: In the relativity theory we see one of the fundamental points of its method is that physical terms such as time, length, etc., are defined by the operations by which one measures them; and in the quanta theory at one and the same time the characteristics of emission and undulation are maintained. Thus the whole character of physical theory in the twentieth century is entirely different from the mechanistic theory of the nineteenth. Science itself as well as theoretical critics of mechanism shows its inadequacy; we might say, that the critics aided science and science upheld the critics.

Up to this point I have tried to show you the development in modern thought of what M. Maritain calls a very important truth: that is, that experimental sciences have explicitly become sciences of phenomena.[20]

What then is philosophy? This became a burning question to many minds in the twentieth century. Metaphysics had been so long for the modern mind connected with necessary, eternal, unchangeable ideas having their seat in reason and upon such had rested moral values and the rational basis for religious beliefs. Science we have seen, had with its empirical implications lead Kant to his critique and this rationalism fell. Science itself had shown that it was non-ontological. Was philosophy, then, just a critique, an appraisal that science is not philosophy;

[19] Cf. A. Einstein and L. Infeld, *The Evolution of Physics* (New York: Simon & Schuster, 1938; A. Rey, *La Théorie de la Physique, op. cit.*; A. Sesmat, *Systèmes de reference et mouvements* (Physique relativiste), Actualités scientifiques et industrielles (Paris: Hermann & Cie., 1937).

[20] J. Maritain, *La philosophie de la nature* (Paris: Tequi), p. 45.

that rationalism is more a dream than a reality and that faith could be just faith—a will to believe? By what principle do we so judge? Even Kant had a difficult time to maintain noumena was just that which was non-phenomena. Something positive always lurked behind that negation. The concept of non-phenomena still expressed the thing-in-itself which no matter how shadowy it became, could not quite disappear or otherwise his own critique would fall.

Others following Comte felt that scientists themselves did not establish the relations between sciences so it was the role of philosophy to synthesise the sciences. This position not only supposed a critique of the sciences but a certain outlook with regard to the synthesis. If that outlook was to be scientific then it would have to be the point of view of one of the sciences and we would be back to the universal method of Descartes with its tendency to an identification of the sciences. If the outlook was not from science how was it justified independently of science if there was nothing but sciences and their synthesis?

Others like Lachelier, Boutroux and Bergson [21] maintained each in his own way " that it is impossible to eliminate from the series of the sciences psychology and it is impossible to find the real frontiers between psychology and metaphysiques." [22] Thus the life of the mind, consciousness is the basis of philosophy. This is very close to the " thought " of Descartes. On the other hand this new school borrows much from Kant—mind enters into the construction of science. Thus spiritual life is saved and philosophy has a field of its own. But still philosophy and science are not completely cut off from each other. In various fashions we see philosophy presupposed by science. In Bergson we come, I think, to some reality that in a sense is common both to the philosopher and the scientist.

[21] Cf. Boutroux, *op. cit.*; J. Lachelier, *Œuvres de Jules Lachelier* (Paris: Alcan, 1923), I, II; H. Bergson, *Essai sur les données immediates de la conscience* (Paris: Alcan, 1930).

[22] E. Boutroux, *op. cit.*, p. 15.

The scholastic philosopher of the Thomistic school goes even further than this. In accepting the realistic point of view of the scientist he can with Eddington start with a table.[23] At the outset both the philosopher and Eddington are commonplace men and they behold a commonplace table. It is an extended object with qualities about it; it is a thing, a substance. Eddington goes on to say that these terms seem very clear to the commonplace man. He then describes the scientific table that is quite unlike the commonplace one. It is an emptiness with widely scattered electrical particles in high motion, etc. What Eddington does not point out is that his second table is really a description of the first table in terms of the experiments that have been made with regard to wood, etc. and the theory that has summarized those experiments. The commonplace man has a very gross appreciation of the construction, chemical and physical, of a plank of wood. To have the scientific view the object is studied in a certain fashion and then thought of in terms of that technique but that does not mean that the commonplace table is an illusion. But to speak after the fashion of Eddington, the commonplace table is not the philosophic table for that would make philosophers rather commonplace. But as the scientist, the philosopher starts with the commonplace table. After much thinking and studying he repeats that it is a qualitative, extended object, a work of art in the broad sense of the term, in a vague sense a thing and in a vaguer sense a substance. The words may seem somewhat the same but the understanding of this third table is quite as far from the commonplace view as the scientific view.

To make this a little clearer take, for example, the notion "thing." Both the scientist and the philosopher have to start with something. The scientist takes it for granted and starts to work experimenting on it. The philosopher stops and asks

[23] A. S. Eddington, *The Nature of the Physical World*, Introduction (Cambridge University Press, 1929).

himself what is a thing? A table, we say, is a thing, so is a tree, so is a man. The philosopher usually decides there is nothing quite like himself. He is a thing, having feeling, knowledge, to a great extent autonomous with rights and obligations. He also changes and though the change is in him there is an identity throughout. The other things that he has known first before himself he now compares with himself. The commonplace man will anthropomorphize them. The philosopher will see how he can call that other object distinct, for example, this plant is a "thing" only in a sense analogous to the notion "thing" as applied to himself. When he considers the inorganic he may ask is a piece of gold a thing or is all the gold the thing, or is gold just a form of some*thing* else? All the way down from man the intelligibility of "thing" has diminished. You could follow out the same reflections on the idea of "nature." To distinguish one nature from another it has for us to be done through some distinguishing property—like laughter marks the man. When you reach the inorganic it is a little risky to select anything except very general characters as marking its nature. You can say the inorganic is qualitative, it is inextended or has quantitative effects, and it lasts in a continuous, successive fashion or is temporal.

What then exactly is the philosopher doing? Is he not seeking, first, to indicate certain notions that are implied in science and we may add one needs to know something of science to appreciate these implications and their role. They are also implied in the commonplace knowledge of the ordinary man. In both cases they must be made precise in a philosophical manner as we have shown above. But secondly a philosopher must not only indicate these fundamental notions and their general meaning but he must make the reality they express as intelligible as he can. Take for example the inorganic nature that we have just spoken of, we said it is qualitative, it is extended or has quantitative effects, and lasts in a continuous,

successive fashion or is temporal. What then you may ask is the character of such a nature that endures in a continuous, successive fashion—one that is and is becoming? The philosopher restates that nature in terms of matter and form. He says that one and the same thing to be itself and yet to be in some fashion other—for that is change—must be constituted as determined and undetermined. These two principles are not something that experimentation can find for they are principles of the existing thing. To separate them or to consider them apart would be the destruction, that is, annihilation not corruption, or a quantitative, temporal thing. Or to take another example: time. By "time" say the physicists of the relativity school, is meant nothing more than the operations by which you measure it. But this must be the measure of a movement and movement is of something that exists in a quantitative, successive fashion. Time, thus for a philosopher means primarily the intellectual appreciation of that fundamental aspect of such a nature. The measure, indeed, is something very necessary for living in the world—as you know when your clock is off—but the measure or science is the handling of time; philosophy is the meager but even more essential understanding of time.

I have tried to show something of the approach and field of the philosophy of nature. It has a certain continuity with common sense but cannot be identified with it. As it is the knowledge of the most fundamental intelligibility of things the scientist in a vague way presupposes it so that he may study these same things, their structure, relation, interactions, evolution, and ultimately their use for man. It is evident, I hope, that the character of scientific knowledge and philosophic knowledge keeps them from overlapping. Also that one needs the other. For if science denies philosophy it either poses as a philosophy as we have seen or it suggests to man that it is impossible to be intelligent. As for example, if the terms in science mean nothing more than the measuring operations and

there is no philosophy behind this you literally do not know what you mean by measuring or operation. Yet philosophy can never substitute for scientific knowledge. It is just because things are so meagerly intelligible for us that we must learn indirectly to handle things through science.

Besides a philosophy of nature the Thomistic philosopher insists on metaphysics. This is not a body of knowledge woven in the upper airs of mind apart from reality after the manner of the rationalists. It too begins with this same intelligible reality of nature but looks at it in a wider but also deeper fashion from the point of view of something existing with the emphasis on existence. It asks what does it entail *to be*? Not just to be this or that but to be at all. Not to be generated or corrupted, to change, but to be or not to be. All that that entails affects in its turn our philosophy of nature so that a philosophy of nature does not seem to be able to reach its precise form except in the light of metaphysics. The Thomist insists on a philosophy of the physical real which does not eliminate the science of it. Rather the two together, though one is not a continuation of the other is a complement one to the other for man is an intellect in a body. To a degree things are intelligible to him but much of that understanding must be gotten indirectly through the handling of them.

E. G. Salmon

THE METAPHYSICAL GROUND OF LOGICAL OPERATIONS

THERE are various types of logical problems: some are strictly technical, others are methodological, and some others are metaphysical in character. All of them have meaning and value; but not all of them have been analyzed completely and satisfactorily. This is particularly true of the metaphysical implications of mathematical logic. The technical developments of this discipline are still considered by most logicians as an illustration or a justification of the nominalist or positivistic principles which guided the efforts of the later pioneers of modern symbolic logic; while those who disagree with these principles are generally ready to belittle the importance of these efforts and of their technical results. The future of symbolic logic does not lie in its opposition to classical logic; but in its integration into the traditional perspective of logical theory.

Many arguments can be adduced in support of this view. In fact, the systematic study of any branch of knowledge requires a number of assumptions conditioned by its object and purpose. There is no science which can be imagined with an absolute starting-point, and which can find within its own development all the elements of its complete justification. This is due to the diversity of our experiences, the discursive character of our reasoning and the complex relation between things and thought. The axiomatic method, which has spread from mathematics to other disciplines, may partially claim its relative justification on pragmatic grounds. But it cannot be self-contained; considering that the meaning of its primitive notions and propositions, the reasons for their choice and the modes of their development, have to be accounted for prior to their pragmatic applications. These explanations take us at once outside the bounds of any axiomatic method as such. In other words, the

assumptions of any discipline are the unavoidable links connecting it with the whole chain of knowledge.

With regard to logic, in particular, the existence of such links is convincingly illustrated by its history and its actual development. In fact, logic has always been affected by theories about the mind, the external world, language and signs, the nature of science and epistemology in general. Recent claims by mathematical logic of self-justification without any reference to philosophy, have no real foundation whatsoever; for an analysis of its assumptions will always show their general dependence from some settled theory of knowledge.

These considerations point to the existence of two fundamental principles which are sometimes ignored by specialists. One is the belief in the *Unity of Knowledge*; and the other is the belief in the *Unity of Thought*. Correctly interpreted, these two principles may help to solve various difficulties that weaken the value of many theories.

As we understand it here, the belief in the *Unity of Knowledge* requires a wholesome systematization of all the positive interests of man. Abysmal divisions between theology and science, or between metaphysics and logic, or between poetry and mathematics, are not conducive to the realization of the essential unity of one knowledge. It is the duty of the thinker to save most of the intellectual experiences of mankind, whatever be their particular field or content. From a practical angle, the best system of thought will be the one which links together reasonably most of these intellectual experiences. Assent to fundamental intuitions cannot be commanded without some measure of tolerance, in discussion, towards rival systems. The results of such a tolerance, however, should be comprehensive and not restrictive.

As regards the belief in the *Unity of Thought*, it asserts that reason as such proceeds always in a regular way, without taking into account any differences between the various systems inter-

preting its activity and the various expression of its application to definite objects. Semantical, grammatical, syntactical and linguistic considerations may well affect theories of reason. But they cannot influence the activity proper of thought as such; for this activity is prior to any such considerations.

With these two principles in view, it should be possible to find out whether the discursive process of reason develops according to a general unitary law. A suggested procedure for the justification of such a law would be to determine (a) whether a fundamental process of thinking is involved in all logical and linguistic systems; (b) whether its interpretation may account for the various logical operations; and (c) whether its implications may be positively and comprehensively connected with other principles of philosophy and of knowledge in general.

These various specifications are satisfied by the traditional form *S-is-P* interpreted broadly as the unitary principle of logic. But this interpretation in terms of the modern developments of logic involves the separation of the technique and the epistemology of the recent nominalist systems of logical theory. This dissociation is permitted if we can justify and estimate the modern developments of logic by means of the *S-is-P* form. For reasons of simplification, we shall confine ourselves to the four elementary calculi of the *Principia Mathematica* duly dissociated from their atomistic foundation.

Little is necessary to be said about the ontological significance of the *S-is-P* form, which we understand broadly according to the Aristotelian tradition involving the formal reality of universals, and the belief in an ordered world of concepts, as well as the univocal and analogous acception of substance. Consequently, the *S-is-P* form entails the orientation of the various elements of a proposition towards the subject always. From its central position, the subject keeps together the attributes, and conditions the proposition as one or more of its various impli-

cations. In fact, a proposition unveils the internal structure of the subject: for the predicate sheds light on the subject by manifesting itself. Truth emerges from this illumination which manifests the ontological participation of certain attributes to the subject under consideration. This ontological participation becomes a logical subsumption in the operational development of an argument as expressed by a series of transformations from one proposition into another. And such a sequence has its parallel in the hierarchy of predicates, which exemplifies the structural order of the universe.

But if the subject-predicate form may account for the conceptual connexions of universals, how can it become the ground of relations and of relational deductions? Or again, how can this form justify the logical calculi? Let us say at once that these calculi are not preformed in the *S-is-P* form, and that they do not develop analytically from it through a mechanical, or tautological, or consequential, or evolutionary process. They rather derive from it by progressive differentiation, a simple process which is made explicit by stressing certain details of the standard forms of propositions and their operational use. It remains to be seen how relations as well as classes can be reduced to predicates amenable to the subject-predicate form; and how the elementary calculi of modern logic can be derived from the implications of the categorical proposition, which is the simplest expression of a judgment.

Let us consider the *S-is-P* form, which is the usual symbolization of a simple categorical proposition. Hypothetical and disjunctive propositions are really compound propositions; because they are not ultimate in character. They are formed by means of categorical propositions having between themselves certain relations indicated by certain propositions. The possibility of transforming these compound propositions the one into the other, as when a hypothetical is reduced to a disjunctive, indicates that there must be some general rules for justifying

these reductions. In elementary logic these transformations are explained by means of a direct analysis of the meaning of the propositional forms involved. It is possible, however, to establish these rules formally in a way which would enhance their operational character.

This operational character may be justified also in another way, by stressing certain distinctions already used in the elementary doctrine of propositions. It has been observed, for example, that a number of technical considerations apply to categorical propositions, especially when taken as parts of compound propositions, without any reference being made to their quality and quantity. This happens in particular in the analysis of an expression such as *if A, then C*. On the other hand, there is a set of considerations about categorical propositions, which refer more specifically to their quality and quantity; as it happens with the doctrine of opposition applied to categoricals and hypotheticals as well. Again, another set of considerations refers more directly to the particular relation between S and P, when these terms are considered as classes, that is, when their extension is more emphasized than their intention. And, finally, it must have been noticed that propositions involving relations specifically require some supplementary considerations in order to justify their treatment. These remarks show at once the possibility of considering any simple categorical proposition under four aspects.

In the first place, the proposition *S-is-P* can be considered as a single whole, as a logical unit, without being split into its component elements. In this case, such propositions can be represented by the letters p, q, r and so on. An expression such as *If A, then C*, will be read *If p, then q*; and, special symbols can take the place of the prepositions used in such expressions, and of any relations postulated between them. With these elements, it is possible to establish a calculus of propositions

dealing with the formal relations obtaining between propositions considered as single units.

Secondly, the proposition *S-is-P* can be interpreted as the simple attribution of a quality to a singular subject. In this case, the letters, Φ, X, Ψ, can be used, to represent the qualities, and the letters x, y, z to represent the individual subjects. An expression such as Φx is called a propositional function; that is, a form which becomes a proposition when a definite value is substituted for the indefinite individual or *variable* represented by x. Special symbols for quantifying the subject can be applied to this expression in order to obtain the standard forms of categorical proposition. With these elements, it is possible to establish a calculus of propositional functions dealing with the formal relations which obtain between expressions containing variables linked up with fixed but unspecific qualities. As a propositional function is a way of expressing the form of a proposition, the initial postulates and definitions of the calculus of propositions are applicable analogically to the calculus of propositional functions. The fact that the latter may be quantified, however, necessitates some special principles in addition to the analogues of the calculus of propositions. The theory of descriptions, which is a part of the calculus of propositional functions, is also used as a means of deriving the calculus of classes from that of propositional functions. But the calculus of classes, which has developed historically before the calculus of propositional functions, can stand on its own merits.

Thirdly, the proposition *S-is-P* may be considered as expressing a relation of membership or inclusion between an individual or a class S and another class P. In order to indicate that a categorical proposition involves class-relationship, we can use the letters a, b, c, for classes, x, y, z for individuals, and certain special symbols indicating the relations involved, such as the symbol $\subset$, representing the relation of inclusion. The notion of a class may be derived from that of a universal, and

more particularly from an analysis of the doctrine of the predicables. A class is an aspect of a universal the extension of which is stressed: it is thus composed of entities linked together through their common participation in that universal. A calculus of classes may be formed to deal with such notions, in so far as they can be combined by means of the two fundamental relations of class-membership (for individuals) and class-inclusion (for classes only), and some other notions and operations derived from them. It may be mentioned that the two fundamental class-relationships are reducible to the subject-predicate form: thus $a \subset b$ may be read *a-is-included in b*; and then by convention the relation *included in* which appears in the predicate, can be transferred to the copula in order to abreviate the operational developments concerning classes. This transformation leads to some basic considerations about relations and their calculus.

Thus the proposition *S-is-P* may represent generally a relation between S and a term T contained in the predicate P, which would be formed then by the combination of a relation R and the term T. In other words, the status of the notion of relation being that of a category, it should be treated as a predicate, and not as a copula similar to the verb *to be*. Nevertheless, it may be admitted by an explicit convention, that such a predicate can be split into its component elements, namely, the relation itself and the term other than the subject, which is related to it; and further, that the relation proper can be transferred to the copula itself. For example, the expression *S-is-P* may be analyzed into *S-is-RT*; and by transferring the relation R into the copula, the expression becomes *S-is R-T*. The advantage of this procedure is to allow the symbolization of relations, and thus to develop a calculus simplifying the otherwise cumbrous expressions involved in the traditional treatment of propositions containing relations as predicates. In such a calculus, the letters R, S, T, can be used as symbols of relations, and the letters x, y, z, as

symbols of the various terms related. Such expressions as *xRy*, *xSz*, stand then for categorical propositions containing two terms linked up by a relation. Moreover, if we define a relation between two terms as the class of couples having between them a specified connection, we can see at once that a relation may be considered as a class of classes; and that it can be thus subjected to the calculus of classes. In fact, the calculus of relations develops on the same lines as that of classes, though, of course, there are a number of notions belonging specifically to the calculus of relations, which add to its complexity and interest.

It follows from these considerations, that a simple categorical proposition of the form *S-is-P* can be represented by one or more of four types of expressions, such as p, Φx, $a \subset b$, or xRy, according to the stress of its analysis. Hence, these four types of expressions can be reduced to the standard subject-predicate form, which is really their ground and the means of their ontological justification. In fact, it appears that the *relation of inherence* expressed by the form *S-is-P* centred towards the subject, is more fundamental than any of the other types of relations between the terms of a proposition. There has been, of course, a great deal of controversy about the interpretation of the copula *is* of a simple categorical proposition. The explanations just given, however, indicate that the fundamental relation of inherence centered towards the subject should not be merely identified with the class-relationship which are so prominent in the Aristotelian logic. This confusion, which did not exist however in Aristotle's mind, is the source of many misunderstandings. In fact, the classical form *S-is-P* is not a particular aspect of a more general propositional form, but the very source and justification of the extension of logical technique in many directions, and of the fundamental logical calculi in particular.

Those calculi have a common technique. Each one takes for

granted a certain number of notions which are not defined, in order to avoid an infinite regression, and which are simple enough to be readily understood. Then certain operations and more complex notions are defined in terms of these primitive ideas. A set of propositions supplementing the use and meaning of the original notions and definitions is then established. And finally, a series of theorems is proved, in each calculus, by means of the given notions, definitions and postulates. So that each calculus develops synthetically, much after the manner of classical geometry. A careful study of these various calculi would show a parallel development of a number of their respective theorems: an indication of the fundamental character of the operations involved.

Calculus of Propositions

We can now proceed with the exposition of the four calculi of symbolic logic. The theorems will be given without their proof, which can be found in more advanced books. Controversial points are also left out for obvious reasons of brevity.

The calculus of propositions deals with the formal relations which can be established between propositions considered as single units. We shall take for granted the notions of *proposition* (represented by *p. q, r,*) and of the *incompatibility* between two propositions (represented by a stroke p/q). The following operations, shown with their symbols, can now be defined:

1. *Negation* $\sim \cdot p \cdot \cdot = \cdot p/p$
2. *Disjunction* $p \vee q \cdot = \cdot \sim p/\sim q$
3. *Implication* $p \supset q \cdot = \cdot \sim p/q$
4. *Conjunction* $p \cdot q \cdot = \cdot \sim(p/q)$
5. *Equivalence* $p \equiv q \cdot = \cdot p \supset q \cdot q \supset p$

It will be observed that these definitions illustrate readily the reduction of hypotheticals to disjunctives and vice-versa,

such a reduction being based on the non-exclusive view of the disjunction. This view will have to be maintained throughout the calculus of propositions, which is thus restricted in the interpretation of its expressions. With regard to the reading of such expressions, a little practice will enable one to determine the range of application of the operational symbols used, and to translate these expressions into ordinary language.

The operational use of the initial definitions is determined by the following postulates which we can take for granted:

1. *Tautology* $p \vee p \cdot \supset \cdot p$
2. *Addition* $q \cdot \supset \cdot p \vee q$
3. *Permutation* $p \vee q \cdot \supset \cdot q \vee p$
4. *Association* $p \vee (q \vee r) \cdot \supset q \vee (p \vee r)$
5. *Summation* $q \supset r \cdot \supset : p \vee q \cdot \supset \cdot p \vee r$

The following theorems can be proved by means of the initial definitions and postulates. It will be noted that these theorems express various inferential relationships derived from the doctrine of the hypothetical and disjunctive syllogisms.

1. $p \supset \sim p \cdot \supset \cdot \sim p$ (*reductio ad absurdum*)
2. $p \supset \sim q \cdot \supset \cdot q \supset \sim q$ (*modus tollens*)
3. $q \supset r \cdot \supset : p \supset q \cdot \supset \cdot p \supset r$ (*hypth. syllogism in Barbara*)
4. $p \supset p$ (*spec. form of law of identity*)
5. $p \supset \sim (\sim p)$ (*double negation*)
6. $p \supset q \cdot \supset \cdot \sim q \supset \sim p$ (*modus tollens*)
7. $p \supset q \cdot q \supset r \cdot \supset \cdot p \supset r$ (*other form of hyp. Barbara*)
8. $q \supset r \cdot p \supset q \cdot \supset \cdot p \supset r$ (*other form of hyp. Barbara*)
9. $p \equiv q \cdot \equiv \cdot \sim q \supset \sim p$ (*modus tollens with equivalence*)
10. $p \supset q \cdot \equiv : p \cdot \equiv \cdot p \cdot q$

This last expression enables us to replace any implication by an equivalence. The postulates and theorems given so far constitute only a small portion of the calculus of propositions. They illustrate, however, the wealth of this system of generali-

zations about the logical relations of propositions considered as logical units.

Calculus of Propositional Functions

The calculus of propositional functions deals with the formal relations which can be established between expressions containing variables linked up with fixed but unspecified qualities. We have seen that such expressions become true or false propositions by assigning values to the variable or variables involved. Propositional functions can therefore be of any degree of complexity. The simplest type is of the form where a quality Φ is attributed to an individual x. By applying quantifiers to this form, we obtain the following expressions:

$(x)\,\Phi x$ (All the x's having the property Φ)
$(\hat{x})\,\Phi x$ (The class of all the x's having the property Φ)
$(Ex)\,\Phi x$ (Some x's having the property Φ)
$(Zx)\,\Phi x$ (The one but unspecified x having the property Φ)

As a propositional function is a way of expressing the form of a proposition, the initial postulates and definitions given in the calculus of propositions are applicable analogically to the calculus of propositional functions. The fact that the latter may be quantified, however, necessitates some more special principles in addition to the analogues of the calculus of propositions. Among them, we may quote the following two postulates and two definitions:

P. $(x)\,\Phi x \supset (Ex)\,\Phi x$
P. $(x)\,\Phi x \supset \Psi x \cdot \supset \cdot (x)\,\Phi x \supset (x)\,\Psi x$
Df. $\sim (x)\,\Phi x \cdot = \cdot (Ex) \sim \Phi x$
Df. $\sim (Ex)\,\Phi x \cdot = \cdot (x) \sim \Phi x$

These principles can be used for the construction of the square of opposition, in the traditional manner. Most, if not

all, of the logisticians use them wrongly in support of a so-called "revised square of opposition" in which the only legitimate relation between general propositions is that of contradictories, there being no contraries, no subalterns and no sub-contraries. Their mistake is to overlook the fact that universal and particular propositions may be either necessary or contingent. In that case, it would be wrong to express A and E solely by means of an implication, as $(x)\Phi x \supset \Psi x$, and $(x)\Phi x \supset \sim \Psi x$, and to represent I and O by means of a conjunction only, as $(Ex)\Phi x \cdot \Psi x$ and $(Ex)\Phi x \cdot \sim \Psi x$, respectively. These distinctions, and the interpretation of the "null-class" in terms of the traditional doctrine of the *universe of discourse*, allow for a strict interpretation of the symbolism of the propositional functions in terms of the traditional square of opposition, and consequently for a justification of the traditional doctrine of the syllogism in all its figures and moods.

These remarks make it clear that the calculus of propositional functions develops the proofs of a number of theorems partly analogous to those of the calculus of propositions. The principal difference between these two calculi, of which their specific symbolism is a consequence, is that the latter deals with unanalyzed propositions, while the former is concerned with general propositions mainly and their relations with singular propositions. The doctrine of *descriptions*, which is a part of the calculus of propositional functions, deals more particularly with expressions containing the special quantifiers (x) and (zx). It is also used by logisticians as a means of deriving the calculus of classes from that of propositional functions, with little regard to the philosophical implications of this procedure. Even if some justification can be found in this practice, the calculus of classes can stand on its own merits. As a matter of fact, it has developed historically before the calculus of propositional functions.

Calculus of Classes

The notion of a class may be derived from that of a universal, and more particularly from an analysis of the doctrine of the predicables. A class is an aspect of a universal, the extension of which is stressed: it is thus composed of entities linked together through their common participation to that universal. The calculus of classes deals with such notions, in so far as they can be combined by means of the two fundamental relations of class-membership (for individuals) and class-inclusion (for classes only). These two relations are represented by ϵ and $\subset$ respectively. In fact, these relations can be reduced the one to the other, by means of the following expression, using notations already familiar to us, and in which a and b represent classes:

Df. $a \subset b \cdot = \cdot (\hat{x})\, x \epsilon a \supset x \epsilon b$

Besides the two operational relations of class-membership and class-inclusion, three other operations are applicable to classes: those of multiplication ($\times$), of addition ($+$), and of subtraction ($-$). The complementary (or negative) of a class is represented by $-a$. The universal class (everything) is represented by 1; and the null-class (nothing), by 0. The relation of the operations about classes to those concerning propositional functions, is given by the following definitions:

Df. $a + b \cdot = \cdot (\hat{x})\, x \epsilon a \vee x \epsilon b$
Df. $a \times b \cdot = \cdot (\hat{x})\, x \epsilon a \cdot x \epsilon b$
Df. $-a \cdot = \cdot (\hat{x})\, x \sim \epsilon a$

The relation between inclusion and the other operations about classes, also in terms of the universal-class and the null-class, is given by the following definitions:

Df. $a \subset b \cdot = \cdot a - b = 0$
Df. $a \subset b \cdot = \cdot b + a = 1$
Df. $a \subset b \cdot = \cdot a \times b = a$
Dr. $a \subset b \cdot = \cdot a + b = b$

The following postulates can be taken for granted:

1. If a and b are classes, there is a class $a + b$, and also a class $a \times b$ (or ab in short).
2. There is a class 1 such that $a \times 1 = a$.
3. There is a class o such that $a + o = a$.
4. There is a class $-a$ for every class a such that $a + -a = 1$, and $a - a = o$.
5. It is admitted that $a + b = b + a$, and that $ab = ba$.
6. It is admitted that $a + (bc) = (a + b)\ (a + c)$, and also that $a\ (b + c) = ab + ac$.
7. There are at least two classes $(a \neq b)$ which are different.

From these definitions and postulates, a number of theorems can be demonstrated. We give the following as examples:

1. $a \subset a$
2. $a + a = a$, and $aa = a$
3. $-(-a) = a$
4. $a + 1 = 1$, and $a \times o = o$.
5. The null class is included in the universal-class, in any other class, and in the negative of any class.
6. $a \subset 1$
7. $1 = -o$, and $o = -1$
8. $a - b = o \cdot \equiv \cdot b + -a = 1$
9. $a - b = o \cdot \equiv \cdot ab = a \cdot \equiv \cdot a + b = b$
10. $ab \subset a + b$
11. $a \subset c \cdot b \subset c \cdot \supset \cdot ab \subset c$
12. $a \subset b \cdot b \subset c \cdot \supset \cdot a \subset c$; or $a - b = o \cdot b - c = o \cdot \supset \cdot a - c = o$

This is the principle of the syllogism in *Barbara*. In order to draw a particular conclusion from two universal premises, the further principle is required that the classes involved are not null. This can be shown to be the case, however, by a discussion of the *dictum de omni et nullo* with reference to the universe of discourse of the terms and propositions involved.

By means of these and other similar principles, the whole doctrine of the traditional syllogism can be developed in terms of the calculus of classes. For this purpose, the four types of general propositions are expressed as follows: *A* by $a - b = o$, *E* by $ab = o$, *I* by $ab \neq o$, and *O* by $a - b \neq o$. In this notation, a syllogism in *Baroco* is represented by the expression: $a - x = o \cdot b - x = o \,.\supset \cdot b - a = o$. In the development of the calculus of classes, a certain parallelism may be observed between the expressions of this calculus and those of the other calculi already mentioned.

Calculus of Relations

The status of the notion of relation is that of a category, according to traditional logic. Such a notion should be therefore treated as a predicate, and not as a copula similar to the verb *to be*. Nevertheless, it may be admitted by an explicit convention, that such a predicate can be split into its component elements (that is the relation itself and the term other than the subject, which is related to it), and that the relation proper can be transferred to the copula itself. The advantage of this procedure, is to allow for the symbolization of relations, and thus to develop a calculus simplifying the otherwise cumbrous expressions involved in the traditional treatment of propositions containing relations as predicates.

If we define a relation between two terms as the class of couples having between them a specified connection, we can see at once that a relation is considered as a class of class; and as such, it can be subjected to the calculus of classes. In fact, the calculus of relations develops on the same lines as that of classes. There are, of course, a number of notions belonging specifically to the calculus of relations: as, for example, the notion of a *direct* relation between two terms (expressed as xRy or simply R), the notion of a *converse* relation (expressed as

yRx or simply R), or the notions of the *field* and of the *domain* of a relation. The treatment of these notions adds to the complexity of the calculus, which combines thus many features of the three calculi already mentioned.

Owing to the greater complexity of the calculus of relations, we can expect to find several new symbols denoting new properties of the relations as such. But as these new symbols can always be defined in terms of those which are already known, the reading of the theorems of the calculus of relations, as developed in more advanced works, should not present any outstanding difficulty.

Conclusion

This classical approach to the principles of mathematical logic does not only help one to become familiar with their use, but it also shows that the various types of reasoning can be readily reduced to the syllogistic pattern for purposes of justification solely, and not as a current technical elaboration. Hence it is not suggested that the symbolism which logistics have so far used, should give way to the verbal and structural patterns of the syllogism. Once their foundations have been clearly visualized in their proper ontological perspective, mathematics and symbolic logic can proceed along the lines best suited for their progress.

A practical consequence of this line of approach is to free symbolic logic from many serious objections which have caused most of the non-positivistic schools of thought either to reject it or to ignore it. It is true that this new integration of symbolic logic entails a re-interpretation of a number of its standard principles. But it will be found that such a re-interpretation, far from impairing the development of logistics, would rather favour the solution of its difficulties, and open new alleys of investigation and progress. Indeed it will be found that most,

if not all, of these difficulties refer to the analysis of meanings rather than to symbolic or structural difficulties.

The purpose of establishing an ontological ground for the leading logical operations, therefore, is not to "torture into Aristotelian shape" the basic forms of the logical calculi; but rather to give a universalist explanation of their principles and their many developments. Thus the leading controversial problems which are connected with the alleged opposition between the classical and the recent logic, could be given a new interpretation illustrating the continuity between the various phases of logic. It is the unity of thought and its distant parallelism with the unity of being that we desired to stress in the foregoing remarks. For it is this unity which should inspire a sound logical doctrine, and which gives colour and meaning to the Aristotelian philosophy as a whole.

THOMAS GREENWOOD.

STUDIES

MISINTERPRETATION OF ARISTOTLE BY GALILEO

Galileo was not satisfied with presenting experimental evidence whereby to overthrow the old Aristotelian physics. He wanted to prove that the Philosopher had been guilty not only of ignorance of facts, but of a logical fallacy too. Galileo claims, in the first of his Dialogues Concerning the New Sciences,[1] that a certain view of Aristotle can be disproved without any experiment "by means of a short and conclusive argument."

The problem under discussion is the relation between the weight of bodies and the speed of their movement, especially in falling. The argument follows logically the explanation and rejection of Aristotle's notions on the vacuum. Simplicius, who in this Dialogue defends the traditional views, renders the Aristotelian conception thus: "Bodies of different weight move in one and the same medium with different speeds which stand to one another in the same ratio as the weights; so that, for example, a body which is ten times as heavy as another will move ten times as rapidly as the other." The second part of the Aristotelian argument "assumes that the speeds of one and the same body moving in different media are in inverse ratio to the densities of these media." Therefore, since the vacuum has the density zero, a body would have to move in the vacuum with an infinite speed or be displaced instantaneously. Instantaneous displacement being impossible, there can be no vacuum.

Salviati, the second partner in discussion, remarks that this argument, even if valid, would prove only the impossibility of motion *in vacuo*, but not of the existence of a vacuum. The objection is somewhat specious. If there were a vacuum, but movement in it were impossible, one would arrive at the rather startling conclusion that a body ceases to move as soon as it reaches the vacuum. Salviati does not stress his point. He proceeds to express his doubts whether Aristotle ever tested "by experiment whether it is true that two stones, one weighing ten times as much as the other, if allowed to fall from a height of, say, 100 cubits would so differ in speed that when the heavier had reached the ground, the other would not have fallen more than ten cubits."

[1] Tran. H. Crew and A. de Salvio, New York 1933, Macmillan.

Simplicius replies that Aristotle "probably" has made such an experiment, since he says that we "see" the movements of the two bodies. He might, at least, have pointed out that the remark on the influence of the density of media must rest on observation, if not on an experiment, properly speaking.

Simplicius is told by Sagredo that experimental evidence shows the Aristotelian proposition to be false. A musket ball of one half of a pound and a cannon ball of 100 pounds, when dropped from a height of 200 cubits, reached the ground at the same time. Salviati goes farther. He claims that the Philosopher was not only incompetent in physics, but also a bad logician and that he contradicts himself. Salviati's reasoning runs like this:

By a short and conclusive argument he is going to prove that a heavier body does not move with a greater velocity than one of lesser weight. Proceeding by the Socratic method he first asks Simplicius whether he is willing to admit "that each falling body acquires a definite speed fixed by nature, a velocity which cannot be increased or diminished except by the use of force and resistance." The Italian word, translated by "force," is *violenza*. This term suggests, that even in the mind of Salviati some remnants of scholastic notions were alive. He evidently opposes the velocity "fixed by nature" to a change wrought by *violenza*, reminding us thus of the notion of *violentum*.

Simplicius having agreed to this, Salviati continues: "If then we take two bodies whose natural speeds are different, it is clear that on uniting the two, the more rapid one will partly be retarded by the slower, and that the slower will be somewhat hastened by the swifter." Simplicius again agrees, very inconsiderately, as becomes apparent immediately. Were he fully cognizant of the principles of Aristotelian philosophy he, indeed, would have to disagree. Simplicius' acquaintance with Aristotelian metaphysics, however, is somewhat defective. Salviati, because of the attitude of Simplicius, is able to proceed: "But if this is true, and if a large stone moves with a speed of, say, eight while a smaller moves with a speed of four, then when they are united, the system will move with a speed less than eight; but the two stones tied together make a stone larger than that which before moved with the speed of eight. Hence the heavier body moves with less speed than the lighter; an effect which is contrary to your supposition. Thus you see how, from your supposition that the heavier body moves more rapidly than the lighter one, I infer that the heavier body moves more slowly."

Salviati rests his arguments on purely logical grounds. Facts do not play any rôle. The question is whether or not Salviati—that is Galileo —has shown Aristotle to be guilty of selfcontradiction.

Salviati's argument is by far not as simple as he wants to make believe his listeners. It implies several premises which have to be disengaged. These premises are allegedly those of Aristotelian philosophy. It remains to be seen whether this contention holds.

Salviati tacitly assumes that the "system" resulting from uniting the two stones remains two stones in one respect, while it is one in another respect. It is, of course, true that two stones are *potentially* one, since they can be united, and that one stone is *potentially* one, since it can be split. It is, however, absolutely false that—as Salviati implies—the two stones remain *actually* two after having been united, or that one stone is still *actually* one after having been split in two.

Secondly, Salviati assumes that Aristotle did consider the relation of speeds, as properties "fixed by nature," as being different from the relation of weights. Of the latter it is clear that they simply add one to another. A stone weighing eight, united to one of three pounds, will give a "system" weighing eleven pounds. The velocities, however, are supposed to add according to another principle, namely one which may be called the principle of mixture. The velocities, Salviati suggests, behave much alike, say colors. If you add black and white you get gray, a color intermediary to the two original lights. So, if you combine two velocities, you will get an intermediate velocity. Simplicius speaks of "a fixed velocity determined by nature which cannot be increased except by the addition of momentum (*impeto*) or diminished by resistance." But the interpretation is Salviati's.

It does not matter whether or not Aristotle considered speed as "a fixed velocity" in the sense in which Simplicius uses the term. The whole argument is significant only if Aristotle held that two bodies united to one retain while united all the properties they possessed while isolated. This idea, however, is expressly rejected by Aristotle.

Properties of solid bodies are predicated of each such body taken singly. It is, therefore, important to know what criteria Aristotle eventually indicates for a body being called one. The clearest statement is found in the discussion of the notion One in the Metaphysics (Δ, 6; 1015 b, 17 ff.). "Of those things which are said to be in themselves one, some are said to be so in virtue of their continuity; e. g. a faggot is made continuous by its string, and pieces of wood by glue. . . .

Continuous means that whose notion is essentially one, and cannot be other wise; and motion is indivisible, *i. e.* indivisible in time." (L. c. 27; tran. H. Trendennick, Loeb's Class. Lib.)

Aristotle, then, concludes the continuity and, therefore, unity or oneness of a body from the oneness of motion. Contrary to the insinuation by Salviati, the Philosopher would have said that two stones bound together are one stone, just as he says that the faggot is one body.

But if two or more things become united in such a manner that they form one body, they cease to exist separatedly and, therefore, their properties may be merged one into the other. Whether this be the case or whether eventually, a property may persist also after the new unit having become established, is a question which needs to be investigated for each individual case.

The faggot, or the two stones tied together, form a new unit. That this unit may be dissolved again with little effort, does not make any difference. There are many other things, potentially capable of separate existence, although usually found bound up with others, and capable of acquiring actual separatedness by some disintegrating procedure, natural or artificial. The resistance the wholes offer to disintegration is one of their properties. Some of these properties belong also to the parts. The hardness of quartz is found in every split off particle, so is the malleability of gold. Other properties do not persist, because they are of the whole as such. All these differences, however, have nothing to do with Salviati's argument.

Salviati overlooked the one fundamental point in Aristotle's argumentations, namely that the diacritical feature of oneness is oneness of movement. He was, therefore, wrong in maintaining that the "twoness" of his two stones persists in any sense after they have been bound together. At least, it does not persist in regard to movement, which is exactly what Salviati claims. Suppose Aristotelian physics to be right, then the faggot, or the two stones will fall faster than any single stick or one of the two stones. There is no contradiction in this point in the philosophy of Aristotle.

The argument proposed by Galileo, therefore, far from discountenancing the Aristotelian position, shows only that the great physicist either did not understand or did not really know the principles of the philosophy he opposed.

Nobody, of course, holds that Aristotle was right and Galileo wrong in their respective statements on movement in its relation to weight. But

Galileo has no right to reproach the Philosopher for his alleged inconsistencies and selfcontradictions. Salviati's argument is truly sophistical, intended to confuse poor Simplicius whose knowledge of Peripatetic philosophy was not sufficient to make him escape the pitfalls prepared by his wily antagonist.

The Dialogues refer to Aristotle. One might indeed question whether their author really read the Philosopher or whether he did not, eventually, rely on the writings of contemporaneous Aristotelians, or people who liked to call themselves by this name. To answer this question, the philosophers who lived at this time must be extensively studied.

RUDOLF ALLERS.

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NOTES AND COMMENTS

Second American Congress for Aesthetics

Members and friends of the American Catholic Philosophical Association are cordially invited to attend the Second American Congress for Aesthetics for the American Society for Aesthetics which will be held under the auspices of the Catholic University of America in McMahon Hall on April 24 and 25, 1942. These Congresses of the Society are the outgrowth of International Congresses which were held in Europe prior to the second World War.

The first Congress was held under the auspices of the University of Scranton. Dr. Felix Gatz, of the University of Scranton, is the President of the association; Dr. Max Schoen, of the Carnegie Institute of Technology, Vice-president; and Professor Alexander Kostellow, of Pratt Institute, Baltimore, is Secretary.

The program for the Second Congress is about ready for printing. It will cover all phases of the subject on aesthetics, with special emphasis on the philosophy of the beautiful. Those desiring to receive programs may address Dr. Gatz, University of Scranton, Scranton, Pennsylvania; or Rev. Dr. Charles A. Hart, Chairman of the Local Washington Committee, Catholic University of America, Washington, D. C.

The following is a partial list of speakers:

Dr. Van Meter Ames, University of Cincinnati: *The Novel, Between Art and Science.*

Dr. Emmanuel Chapman, Fordham University: *Thomist Contributions to Contemporary Aesthetics.*

Dr. Louis W. Flaccus. University of Pennsylvania: *Distance as an Aesthetic Concept.*

Dr. Felix M. Gatz, University of Scranton: *The Autonomy of Art.*

Dr. Katharine Everett Gilbert, Duke University: *The Relation of the Dance to the Other Arts.*

Martha Graham, Dancer: *The Meaning of Dance.*

Dr. Charles A. Hart, the Catholic University of America: *The Place of the Beautiful in the Field of Philosophy.*

RAISSA MARITAIN, Poetess: *Prayer and Poetry.*

DR. OTTO ORTMANN: *Aesthetics of Melody.*

DR. CARROLL C. PRATT, Rutgers University: *Objectivity of Aesthetic Value.*

DR. PAUL R. RADOSAVLJEVICH, New York University: *Experimental* Pedagogy and Art Education.

DR. MAX SCHOEN, Carnegie Institute of Technology: *Walter Pater on the Place of Music Among the Arts.*

DR. LIONELLE VENTURI, University of California: *The Idea of Abstraction in Painting, Sculpture, and Architecture.*

BOOK REVIEWS

Theism and Cosmology. By JOHN LAIRD. New York: Alliance Book Co., and the Philosophical Library, Inc. Pp. 325.

The Gifford Lectures delivered annually in the University of Glasgow have been the best known series of lectures given in the English speaking philosophical world on the subject of religion. This particular course entitled *Theism and Cosmology* by John Laird of the University of Aberdeen has the dubious distinction of being one of the poorest in the series.

Dr. Laird defines Theism broadly enough to include polytheism and pantheism; a theist is one who asserts that there is a God or gods, or a "God in the making."

The cosmological argument for Theism he identifies both with the argument "a contingentia mundi" and the argument of the "Primum Mobile." Understood as the argument from the self insufficiency of the universe, the author argues that since the cosmological argument implies an inferior mode of being than the God to be proven, it is objectionable, for "what exists does exist and cannot have semi-existence." Returning to the theme that "the world" is a "spatio-temporal order" and is best described as "modified finitism," he concludes that "it cannot support a theistic conclusion unless "God is defined as anything that is so and so."

Creation "ex nihilo" is rejected. In its place is substituted the "metaphysical theory that all existence is in process, and that creativeness is a necessary aspect for anything that is in process." The philosophy of becoming is the root of the universe, "consequently there is no sense in supposing that any existent, divine or secular, non-natural or natural, originates the process of becoming." Then comes this wierd piece of mental gymnastics, in which one fancies the author was describing a malignant tumor rather than Divinity. "There was a time when the growing God grew by himself. At a certain moment his growth began to include a relatively independent growth, namely the growth of the world. At some later moment there may cease to be any renewal of the world." Then half suspecting his own illogicality, from the depths of a mental inferiority complex, he adds: "This view does not seem to me to contain any internal contradictions."

The name Heraclitean dynamism pervades the discussion of God's attributes. God cannot be omniscient or possess fore-knowledge because the total process of the world is not yet completed. "Omniscience can be applied only to what there is to know . . . ; it cannot, literally and directly include the knowledge of truths about later events before they concur." God's ubiquity is denied on the basis of materialism. Arguing from the proposition that "if a thing *be* at all, it must be extended" he concludes to a pantheistic, spatial God.

In brief, Dr. Laird asserts that it is impossible to rationally demonstrate the existence of God. The major difficulty lies in the question of temporal succession, for "it is impossible that deity should be effectively related to any succession without itself containing succession." Advocating a "revision of the traditional attributes of God" he concludes his work on Theism by asserting he is a pantheist, and thus we are brought back to the beginning of his book, where a pantheist is called a theist.

These lecturers were given in 1939, that is to say, the year England entered the war. This is important to note, for it is unlikely that anyone who passed through the crucible of suffering and the fire of war, would come out unpurged of materialism and the irrationality of the philosophy of becoming. The finite-god, becoming-philosophy of Dr. Laird is already so antiquated among modern thinkers that one wonders why in this late date he is asked to re-hash the same ideas that were given by a Gifford lecturer more than twenty-five years ago.

During the first world war and a few years later, there were several finite-god philosophers following the tradition of Grant Allen, who linked up a finite God with the notion of time, notably among whom were S. Alexander, Pringle-Pattison, Douglas Fawcett, Sir Henry Jones, H. A. Overstreet, E. H. Reemon and F. Howe Johnson.

Dr. Laird has said absolutely nothing these philosophers have not already told us, and in most instances he never says it half as well. If the God who protects the King of England and the British Empire in this war is the temporalized pantheistic god of Dr. Laird, then God help the King.

This book furthermore betrays a total ignorance of the existence of a philosophy which made Western culture and which still inspires many minds in it. It is not to the point to retort that Dr. Laird rejects the traditional approach to Theism. The fact is he does not know the traditional approaches but only their distortion in Kant and Hume. Nowhere in the book is there a discussion or even a mention of the

subject of analogy except this flippant dismissal: "There are not several distinct ways of existing, one of which is full existence, and the others some kind of partial existence. . . . All serious and determined philosophical talk about half-being, three-quarters or five-eighths being seems to me reprehensible."

There are only two indirect quotations from St. Augustine, but nothing from the whole field of medieval philosophy. Not a single modern writer on Scholasticism is mentioned, with the exception of two lines from Maritain. The excellent treatise of Dr. Paterson which came from the University of London is nowhere mentioned.

The point of this protest is not that Dr. Laird does not accept the Scholastic position on God—that is a matter he and God will have to settle between themselves some day—but rather that he lets philosophical inconsistency and twaddle win such an easy victory. We like to read books against the traditional position provided they make us sharpen our wits, as Bergson did. But when we are face to face with a statement "There was a time when the growing God grew by himself" we we are not reading philosophy but drivel. We are living in an age of tragedies. The war is one. But certainly it is no less a philosophical tragedy, to be assured by Dr. Laird, that there is another volume to this series.

FULTON J. SHEEN.

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The Steps of Humility. By BERNARD, Abbot of Clairvaux. Translated, with Introduction and Notes, as a Study of his Epistemology by GEORGE BOSWORTH BURCH. Cambridge, Massachusetts: Harvard University Press, 1940. Pp. xi + 287. $3.00.

Without some knowledge of Bernard's thought it is not possible to obtain a well-rounded view of the Middle Ages. There are histories of philosophy whose authors have been somewhat remiss in their treatment of the teaching of the celebrated Abbot of Clairvaux. Among the books included in the bibliography of the present volume one must note the Polish work of Professor Tatarkiewicz, one of those which give a more adequate account of St. Bernard's doctrines.

One must point out that more than one hundred pages of Dr. Burch's volume are devoted to a really enlightening exposition of Bernard's

theory of knowledge. He has carefully culled Bernard's scattered references to knowledge in general from all his writings and ably interpreted those Latin texts for the benefit of the reader. It will escape no one that this task has been performed in a scholarly manner.

An examination of the translation will reveal that it is fully sufficient to convey St. Bernard's thought and meaning. The translator states that the Latin original is substantially the critical text of Barton R. V. Mills, published by the Cambridge University Press. Quotations from the Bible are given in the King James version. The English translation is found on the page opposite to that which contains the original. This arrangement will be appreciated by most readers who, no doubt, will also find it advantageous to peruse the notes at the end of the volume. It must be acknowledged that Dr. Burch has prepared a volume which will prove valuable to all serious students of the culture and civilization of Mediaeval Europe.

J. J. Rolbiecki.

Man of Spain, Francis Suarez. By Joseph H. Fichter. New York: The Macmillan Company, 1940. Pp. 349. $2.50.

Fortunately the publishers of this volume announce on its jacket that it contains a biography of Suarez, otherwise one could not divine that from its title, particularly since the book lacks both a preface and introduction and begins quite abruptly with a chapter entitled, "Maternity." One must observe that the author has relied primarily on secondary sources for biographical data, especially on the writings of De Scoraille.

To tell the truth there is little to interest philosophers in this work, except perhaps the chapters on Suarez' philosophy of law and his teaching on democracy. There is something amateurish about this writing, manifested in passages where the author apparently is striving for effect, and where it bears the aspects of a panegyric. The writer now and then lapses into what at any rate closely resembles journalese. As a rather popular biography of Suarez the book will no doubt help to make more widely known the dominant figure of the modern Scholastic renascence in the Iberian peninsula.

J. J. Rolbiecki.

L'Argument de Prescription dans le Droit romain, en Apologétique et en Théologie dogmatique. Par JEAN-LÉON ALLIE, Oblat de Marie-Immaculée, Docteur en théologie. Canada: Les Éditions de l'Université d'Ottawa, 1940. Pp. 221. (Universitas Catholica Ottaviensis Dissertationes ad gradum laureae in facultatibus ecclesiasticis consequendum conscriptae; Series theologica—Tomus I).

The introduction discloses that this dissertation is the first to be issued during the second period of the theological faculty at the University of Ottawa,—that period which is marked by the adoption of the new charter in accordance with the requirements of the Apostolic Constitution *Deus Scientiarium Dominus*. As such it sets a high standard of scholarship, of insight, and of style, which gives promise of a theological series of distinction if the authors of subsequent volumes emulate the industry and judgment of the present author.

The subject chosen is one unusually appropriate for treatment within the scope of a doctoral dissertation. And while only French and Latin sources have been utilized, they have been thoroughly raked over and treated with a verve which individualizes the work and makes it a fresh study of a centuries-old problem. Whether any deficiencies exist from the standpoint of apologetics and of dogmatic theology must be left by this reviewer to critics competent in such matters. Over and above whatever value it may have in those fields, it strikes a unique note in the interrelationship of law and Christian doctrine, a field all too rarely worked, which ensures it a permanent place in the Christian philosophy of law. It is as grist for that mill that it will be appraised in this review.

During the present century, as Archbishop Cicognani notes in his treatise on *Canon Law* (1934 ed., p. 51 n. 29), what amounts to a new school in legal thought has arisen which concerns itself with the influences of Christian doctrine on law. Up to the present time, two lines of development have been undertaken. Dr. Riccobono, and Dr. Violardo in his work on St. Jerome, demonstrate the modification of the Roman Law under the impact of Christian dogmas. On the other side, Dr. Lardone in his article on Roman Law in St. Augustine (*Georgetown Law Journal,* 1933) and Dr. Allie in the book under review, show that the Church Fathers were not only familiar with Roman Law but utilized its concepts in explaining Christian ideas. That much more remains to be done is obvious when it is recalled that the writings of jurists like Lactantius and St. Ambrose have not yet been worked over in this way,

but the method of procedure has been brought to a high degree of perfection by the competence of these pioneer scholars. When their monographs are multiplied sufficiently to include not only later centuries in the Roman system but also Christian influences on the Common Law, new insights are possible for the solution of the practical legal problems of our day.

Dr. Allie, by his work on Tertullian in this book, takes us back to the beginning of the narrative and writes what must be the first chapter in any historical outline of the Christian philosophy of law,—unless, of course, St. Paul and the Apostles, and even the Master Himself are to be included in the body of such a projected work rather than allotted to a prologue. The testimony of Tertullian as the earliest of the Church Fathers is particularly valuable because at the time Tertullian was writing, Roman Law itself was undergoing an unusually fine period of development with the appearance of the natural law jurists. And perhaps the most important contribution Dr. Allie makes in the legal aspect of his book is the care which he has taken to compare Tertullian's use of the concept of prescription with that of Gaius,—a comparison which could only have been made in the last century with the rediscovery of Gaius' Institutes on the palimpsest at Verona by Niebuhr. Whether Tertullian, the Christian apologist, and Tertullian, the jurist quoted in the Digest of Justinian, are one and the same person is still impossible of proof, but Dr. Allie certainly offers convincing evidence that Tertullian the apologist had not only a legal mind but also such a mastery of the legal concept of prescription that he supplied one of the most enduring arguments in behalf of the teaching authority of the Church.

To the Common Law practitioner no less than to the Civilian, added clarity in the significance of the use of prescription as a means of acquiring title to property must come after following Dr. Allie's explanation of Tertullian's argument. The familiar saying that possession is nine points of the law has become the colloquial way of putting it. At times the phrase is used in such a way, however, as to appear to justify forceful taking or appropriation. That such is not the proper usage is the conclusion to be drawn from Dr. Allie's analysis, for by tracing the development of the *Prescriptio De Reo* and the *Prescriptio Longi Temporis* as defences in the third century, he shows that the concept really means that no later claimant to a title can be received or heard against one having possession openly over a specified term of years. In applying this to apologetics, Tertullian simply was saying

that unless your teaching had been received in direct line from the Apostles who received it from Christ, you had no right to be heard as a witness of the dogma. It is the not receiving of the claim of interlopers as against the person rightfully in possession, which is shown to be the original meaning of the concept of prescription rather than the protection of intruders and upstarts, which has at times unjustifiably been thought to have been the meaning. In a way it is analogous to the concept of non-recognition in international law.

That the argument from prescription first adapted from Roman Law to Christian dogma by Tertullian was considered an effective one by later apologists of eminence is disclosed by the subsequent chapters of Dr. Allie's book in which the use of the idea by St. Vincent of Lerins in the *Commonitorium*; by Cardinal Richelieu. in his *Les Principaux Points de la Foi Catholique . . .* ; by Pierre Nicole of the Port-Royalists in his *Perpetuité de la Foi*; and by Bossuet in *L'Histoire des Variations*, is carefully analyzed. Taken as a whole the dissertation is not only interesting but stimulating in the fertility of the ideas it contains and will be of permanent value in the field of the Christian philosophy of law.

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Washington, D. C.

An Inquiry into Meaning and Truth. By BERTRAND RUSSELL, M. A., F. R. S. New York: W. W. Norton & Company, Inc., 1940. Pp. 445.

The aim of this work, modestly stated in the introduction as "an investigation of certain problems concerning empirical knowledge" (p. 9), later appears to be the presentation of a theory of knowledge worked out on a basis of empiricism with special reference to the recently developed science of linguistics. The introduction contains not only a summary of the contents of the various chapters (pp. 19-22), but also an outline of the epistemological theory put forward by the author. After rejecting as insufficient the behaviorist account of the phenomena of knowledge, according to which knowledge and error are "observable relations between the behaviour of the organism and the facts of the environment," he embarks upon a critical scrutiny of "what passes as knowledge." It is the business of epistemology, he maintains, to arrange what we think we know in such order that earlier propositions are the

grounds for accepting later ones. The basic propositions, in such an arrangement, will be those "statements about matters of fact that appear to us credible independently of any argument in their favour" (p. 17); and besides examining the nature of the inferences by which we pass from these to derivative beliefs, it is essential to inquire into those relations between basic propositions which serve to confirm our belief in the propositions so related, as well as into the relations between basic propositions and the "non-verbal occurrences which may be called 'experiences'" with which they are connected. His main problem throughtout is 'the relation of a non-verbal experience to a verbal statement which it justifies" (p. 19).

A careful reading of the first five chapters is unnecessary for anyone acquainted with the elements of modern logic and the cognate notion of a hierarchy of languages. Most of the matters touched upon in the first 115 pages are repeated later on, just before being discussed more carefully. Thus, for instance, all that is necessary to understand the discussion, in Chapter 19, of the two principles which the logical positivists call the theses of extensionality and atomicity will be found in the chapter itself (pp. 324-342), and in the very useful description of how to construct a "logical language" out of judgments of perception by the three operations of substitution, combination, and generalization (pp. 243-255). Beginning with Chapter 6, however, the reader will do well to study each chapter carefully. In this and in the following chapter particularly, a theory of names is put forward which not only avoids "the familiar objections to the notion of substance" by attempting to "construct out of qualities bundles having the spatio-temporal properties that physics requires of 'things,'" but also has as its "principal merit" (p. 127) that of making the identity of indiscernibles analytic. The theory there developed is supported by an analysis of perception and knowledge (Chapter 8), which concludes with the statement that such words as *I*, *you*, *here*, are not needed, because all knowledge stated by means of them can be stated without them. The remaining chapters are devoted, for the most part, to a strictly epistemological theory which is worked out along the lines indicated in the Introduction, as already noted. But for this theory the ideas of Chapter 6 and 7 are fundamental, as is clear from the frequent references to these chapters in subsequent pages.

Mr. Russell's carefully reasoned arguments against the extreme position of certain logical positivists should be effective in checking the

antimetaphysical trend of current philosophy. About the value of his theory of knowledge as a positive contribution to philosophic thought, he himself is explicitly non-committal. The net result of his inquiry, he tells us at the outset (p. 10), "is to substitute articulate hesitation for inarticulate certainty. Whether this result has any value is a question which I shall not consider." It need hardly be pointed out that this result is inevitable for anyone who regards the whole subject of epistemology as "a product of Cartesian doubt" (p. 16; cf. pp. 145-146); because, as Professor Gilson has clearly shown in his *Realisme Thomiste et Critique de la Connaissance*, the problem of knowledge is simply not solvable from this starting-point.

Apart from all question about the value of its net result, Mr. Russell's inquiry is interesting as evidence that the extreme stand of some of the logical positivists is not due to their use, or abuse, of the technique of modern logic. For the arguments which he advances against their tendency toward linguistic solipsims are derived, for the most part, from an empiricism akin to Hume's rather than from purely logical considerations. This is true even of his objections to Brouwer's treatment of the law of excluded middle (Chapter 20, esp. pp. 343-352), and to Neurath's denial of basic propositions (Chapter 10, esp. pp. 174-186).

A second and more important by-product of this inquiry is the evidence it affords of the complete bankruptcy of the Descartes-Locke-Berkeley-Hume tradition, so far as constructive philosophic thought is concerned. Here is a serious attempt, made by a skillful logician thoroughly acquainted with the findings of modern science, to derive from this tradition a means of avoiding metaphysical agnosticism. And at the end he has found nothing better than a hesitant conclusion "that there are universals, and not merely general words" (p. 436), as well as some grounds for believing "that, partly by means of the study of syntax, we can arrive at considerable knowledge concerning the structure of the world" (p. 438). Thus, quite unintentionally, "these William James Lectures" (p. 6) serve to support one of the main conclusions arrived at in that earlier series of William James Lectures delivered at Harvard by Professor Gilson, on *The Unity of Philosophical Experience.*

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Principia Juris Politici. JOSEPHO N. GÜENECHEA, S. J. Apud Aedes Universitatis Gregorianae, Romae, 1938, Volumen Primum. Pp. 325.

The first of two volumes expounding the Christian philosophy of the fundamental political questions constitutes a valuable addition to the bibliography on pertinent problems of world interest. The author, who is Professor in the Gregorian University Rome, naturally uses Latin as the medium of expression. His work however, is a more practical exposition of the subject than is generally found in the most seminary class-room texts.

The bibliographies that accompany the different sections of each chapter are valuable additions even though not always complete especially where English texts are cited.

In the work one finds extended discussion and practical evaluation of specific governmental political institutions as well as of the fundamental questions concerning the origin, nature, and functions of the state, sovereignty, authority, etc. His discussions and judgments regarding the modes of suffrage, and especially concerning proportional representation, constitute a welcome addition often overlooked in such treatises. Not a few modern authors are deceived into believing that "proportional representation" constitutes a basic remedy for current ills of democracy and of the parliamentary or congressional system of popular representation. Father Güenechea fails to find in the "proportional representation" method any such panacea. In his conclusions he is in basic agreement with the findings of the distinguished Professor of Politics of Notre Dame University, Dr. F. A. Hermano, former Instructor of The Catholic University of America, who in his recent scholarly work, Democracy or Anarchy, rightly credits "proportional representation" with not a little of the Anarchy which developed in the governmental systems of France and Germany. By overstressing the liberty and individual rights of citizens, even in the matter of political representation, national unity and authority were sacrificed in a way which ultimately led to the curtailment of fundamental personal rights including that of liberty itself.

The author's discussion of the Corporative Society and the corporative state, with special reference to Austria, Portugal, Brazil and Facisti Italy, is not the least valuable part of this treatise on Political Philosophy.

DONALD A. MACLEAN

From Beast-Machine to Man-Machine, Animal Soul in French Letters from Descartes to La Mettrie. By LEONORA C. ROSENFIELD. Preface by Paul Hazard. New York: Oxford University Press, 1941. Pp. xxviii + 353.

The author gives an interesting study of the three cornered fight concerning the rationality, or else the soul of animals. This fight was waged, not without some bitterness at times, with humor and irony at others, between philosophers, theologians, poets and *érudits* in general. The three parties were the Cartesians on one hand, the empiricists on the other, and between them, allied to the first in later years, but combatting them originally, the traditionalists, which means mostly those who adhered to a more or less diluted and distorted Scholasticism. They were partly dependent on Aristotle and Aquinas, although the true understanding of their sources was much on the decline, partly they favored a more Platonic conception. Mrs. Rosenfield uses the term neo-Platonists much as the other neo-Scholastics; she does not imply any direct influence of Plotinian ideas.

While this terminological idiosyncrasy is harmless, it is regrettable that the author who has so much valuable information to impart, did not try to acquire a better understanding of the traditional view. She evidently misconceives the notion of substantial form. Perhaps misled by the "substantial," she seems to believe that the sensitive soul was considered, by the traditionalists, as an intermediary substance, neither material, nor spiritual. It escapes her, that the intermediary position rerefers to the character of form, but not of substance.

The Cartesians regarded beasts as mere automata, devoid of any mental life. The Empiricists inclined towards a conception which credited beasts with mental life of essentially the same nature as man's, although different in degree. Some, however, more poetically minded, thought that beasts might even be superior in some sense to men. The traditionalist view held that there is a mental life in animals, due to the sensitive soul, distinct from the human mind by the lack of rational faculties, and similar to the human mind only insofar as one abstracts from the greater dignity sensory faculties gain by being connected with and rooted in a rational soul. Because of the sharp line of division, Cartesianism drew between animal and human nature, some of the Catholic philosophers felt that this theory supplied them with an effective weapon against the materialistic trends alive in Empiricism. The final result was the overthrowing of both Cartesianism and tradi-

tionalism and the prevailing of a purely naturalistic view, as emphasized by La Mettrie.

It is interesting to see how many of the ideas which later came to be widely accepted were proposed, sometimes even in an explicit manner, by the thinkers of the seventeenth and eighteenth century. There are, e. g., definitely evolutionistic ideas quite common with many of the authors.

Mrs. Rosenfield deals more extensively with the seventeenth than with the eighteenth century. What regards the latter, some complementary information may be found in Dr. R. R. Palmer's *Catholics and Unbelievers in Eighteenth Century France* (Princeton, 1939).

There are 33 pp. of bibliography. The sources are carefully listed, and many works and articles dealing with the matter are mentioned. Curiously there is not one title taken from German literature, although the history of the soul-notion and similar questions have been repeatedly discussed by German writers. The index is exhaustive and useful. Several additional informations are gathered in an appendix.

The philosopher will profit by this book insofar as it contains a great number of else unknown or inaccessible references. He or anyone interested in the history of human thought will appreciate the author's work as a contribution to the general cultural history of these ages. As a chapter in the history of philosophy, however, this book is hardly acceptable, because of the fundamental errors alluded to above.

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Ransoming the Time. By JACQUES MARITAIN, translated by HARRY BINSSE; pp. 322 including appendices and index. Scribners, $3.00.

Since philosophy linked to faith can *ransom the time* and redeem the human search after truth, Maritain has here philosophized about apparently disparate subjects but has caught them all together in one grand sheaf which gives meaning to the complex patterns of earthly destiny. It is his hope that these essays will vindicate the claim of Thomistic philosophy as a vital and dynamic force in human thinking. The range of subjects treated includes such timely problems as Anti-Semitism, the political enslavement of human persons by those who deny human equality, and the Catholic Church and social problems; this same range brings into focus the obscure metaphysics of Bergson

with his confusion of possibility and potentiality as the basic error, the mooted question of cooperation of men of different creeds on the spiritual and temporal level, and the fact of magical thought. A few of these topics will be touched upon in this review.

Human Equality. Maritain formulates three principal historical positions of the fact that all men have the same specific nature, (1) the pure nominalist or empiricist notion which is labelled as a philosophy of enslavement; (2) the pure idealist notion, the philosophy of egalitarianism; (3) the realist notion which in no way suppresses inequalities but bases them on equality as something more fundamental and turns them by virtue of justice into an equality concerned with the use and enjoyment of the common good. The empiricist concentrates on inequalities and fails to see the reality and dignity of that nature which all men have in common. When it reaches out into the scientific world or establishes a pseudo-social science it begets such notions as race superiority and the doctrine of blood. Such a view of human nature is sharply criticized by Maritain as opposed to natural and supernatural truths. Pseudo-Christian egalitarianism rejects all inequalities in its mad passion to reduce all to a levelled mass. Yet as is pointed out inequalities exist despite all desires to the contrary, and they are found in governments which pride themselves on egalitarian principles. By an effect of the very dialectic of error, as Maritain shows, the totalitarianism which is the product of enslavement is the final achievement of this group. The realist finds equality not as a mere idea but in the roots of the substance of each man. Inequalities are likewise present. Their mutual relation and application to forms of government are expounded with a clarity much to be desired in other essays in this book. In discussing the equality of proportion the author could have profitably cited the text of his master Aquinas who in explaining this proportion took his example from the fingers of the human hand. In one sense, St. Thomas says, the fingers of the hand may all be said to be equal as fingers. Yet they have not only different positions on the hand but are also of different sizes and abilities and have different functions to perfrom in relation to the hand and to the whole person. Moreover, one finger under the circumstances could not at all perform the functions done so well by another. This equality is similar, concludes Thomas, to the equality found among all members of society.

Participation in political life. Maritain chooses to discuss this important problem under the title of the political ideas of Pascal. To

avoid the evil effects of rationalism in politics, Pascal, made two serious mistakes which coloured all his work,—he refused to accept the guidance of reason, and frustrated any possibility of justice in society because his Jansenistic theology convinced him that human nature was utterly corrupted by Adam's sin. The authors analysis and philosophical speculation lead to the conclusion that organic democracy must imply the education of its subjects not merely with instruction which enriches the mind but an ethical education which develops the moral virtues. He logically concludes that such an education is impossible without religion and the grafting of grace on our souls. It is but a step to conclude that if democracy seeks stability it can only find it in a vital Christianity not a *tolerated* Christianity.

The Metaphysics of Bergson. The intimate relationship that existed between teacher and pupil has occasioned this tribute of the pupil to the teacher, a tribute that in no instance sacrifices truth for sentiment. Full credit is given to Bergson for reviving an interest in metaphysics even though his philosophy shows an abandonment of reality for the shadows of the experimental. Maritain sets out to answer the question whether or not Bergson's metaphysics led him to God. He finds evidence that a whole system of atheistic metaphysics could have been constructed from certain Bergsonian tenets and it was only by triumphing over his own principles that he found the personal, loving God Who brought joy into his life. In "Two Sources of Morality and Religion," Bergson affirmed that humanity and life could be loved only in Him Who is the Principle of life. Maritain while praising Bergson's approach to reality in this work of morals and religion makes necessary reservations which he discusses in some detail.

Love of Neighbour. No religious problem offers more intense debate than the advisability of the divergent religious creeds removing all obstacles to human cooperation. Maritain is careful to cut through dogmatic and social implications by considering the basis of good fellowship among men on the spiritual and the temporal level. As an introductory thesis he offers the Catholic doctrine concerning the status of non-Catholics and salvation. Clearly he defends the position that there can be no scrapping of revealed doctrines and in the field of dogmatic religion the true Church can never bend over backwards in any attempt at conciliation. In the matter of temporal cooperation the teaching of Christ on love of neighbor embraces the entire race, cutting through barriers of color, language and nationality.

The remaining essays include the problem of anti-semitism, the Catholic Church and social progress, and a treatise on the sign and symbol with the mutual causality demanded of both. Maritain is never satisfied to restrict his discussion to a surface analysis but views his problems from the heights of Christian widom. It is his contention that the world today is serving men a summons, a summons that can be answered only by believers. He warns that if those who wear the insignia of the spirit allow their souls to become subject to the forces of destruction and prostitute religion to violence, the disaster for civilization will be irreparable. The equality which gives dignity to man, the justice which social life demands and the goodness which men and women must show forth in their actions must never remain mere words; they must be made flesh for if we speak the truth without doing it we run the risk of leading men to disregard truth. The conclusion of all the essays may be summarized in one proposition: Religion must never be divorced from life but rather God must be confessed in all walks of life.

Two appendices are found in the book; one gives pertinent quotations from papal encyclicals which complement his chapter on the Church and social progress; the other gives a series of incidental Latin quotations from John of St. Thomas which round out the author's own observations on the use of the sign and symbol.

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Washington, D. C.

The History and Meaning of the Term Social Justice. By LEO W. SHIELDS. The University of Notre Dame; Notre Dame, Indiana, 1941. Pp. 81.

Since the new term "Social Justice," which first made its appearance in philosophical literature in the middle of the nineteenth century and then reached the height of its popularity in the post-war decade, has already begun to disappear from all but Catholic usage, Doctor Shields undertakes in this dissertation to set forth the origin and history of the term. He is careful to point out that the purpose of the study is "not to enumerate all the things that social justice has ever meant, but to see whether among the multitude of usages there is some meaning of the term sufficiently common to justify the use of it in a precise sense."

The work is divided into three main sections: the first, a summary of the Thomistic doctrine of Justice, with a special attempt to distinguish legal justice from those virtues with which it is sometimes confused: distributive justice, obedience, and patriotism. In this otherwise very good summary, it may be wondered whether Doctor Shields is entirely within the letter of St. Thomas in excluding the possibility of a special act of legal justice: "Does it have, as a special virtue, any special acts which are not the acts of the other virtues? The answer must be negative." From the statement that legal justice orders the acts of all other virtues to its own end, it is not legitimate to conclude that this ordering of the *other* virtues is the *whole* of legal justice. The latter statement further limits the concept of legal justice, and would have to be supported by textual evidence of its own to be properly called Thomistic. The only text this reviewer knows which could lend itself to this interpretation is to be found in the Summa Theologica, 2a 2ae; LVIII, 6: "Hoc autem modo justitia legalis dicitur esse virtus generalis, inquantum sc. ordinat actus aliarum virtutum ad suum finem, quod est movere per imperium omnes alias virtutes . . ." A hasty reading here might leave the impression that the end itself of legal justice is to rule the other virtues, but both the syntax and context show that the *quod* refers not to *finem* but to the whole clause which precedes.

It is important to leave this question open at the present time, as it seems to be an open question in the text of St. Thomas; for in both *Quadragesimo Anno* and in *Divini Redemptoris,* Pope Pius XI seems to open up the possibility of a specific act of "social justice" (the formation and reformation of institutions) which is not readily reducible to an act of any other virtue. It would have been interesting also to have included a discussion of epikeia in the analysis of legal justice.

The second major division of the dissertation gathers together and analyzes the most representative occurrences of the term "social justice" beginning with A. Tapparelli's *Saggio Teoretico di dritto naturale,* published in 1845. This listing of the principal occurrences of the term is an invaluable aid to the student of social justice, and is the best piece of work of its kind which has so far appeared.

Dr. Shields' conclusion from his analysis is that Social Justice is a new name for the old, but at present little understood, Legal Justice: "We have seen that all these authors who have distinguished social justice from legal justice have done so through not understanding what

legal justice is. Our review of their opinions has shown that if there is any one thing they mean by the term social justice, it is legal justice as properly understood. No valid arguments have been brought forth to justify a new division of justice. "Our conclusion must be that the commonest opinion is the right one (for most of the authors quoted make the identification) and that social justice as a scientific term must be a new name for legal justice."

The work concludes with critical estimations of the value of Social Justice as a term, as an idea, and as a thing. It is only the first of these—the value of the term—which lies within the professed purposes of the dissertation, the other two being something of an epilogue. Dr. Shields concludes that despite the fact that the term may invite a certain misunderstanding based on the intense individualism of the past two centuries, it is the best term available for the idea it represents —certainly better in modern times than the term legal justice which is open to much more serious misunderstanding.

The epilogue unconsciously points a moral which this reviewer thinks is as valuable as anything else in the book. Dr. Shields says: "We have seen that the notion that social justice is an extremely ambiguous term is founded on the fact, not that it is used with too many different meanings, but that it commonly and primarily is used to mean something that is not very well understood. The remedy for this condition is a wider and sounder understanding of the *precise nature* of the end, *obligations and acts* of the general justice with which social justice must be identified." (Italics added.)

Later Dr. Shields himself attacks briefly this problem of setting forth the *precise nature of the obligations and acts*: "How is it to be revealed in practice? In a democracy every voter, far more every influential person, has to have social justice *principally*, as a ruler. In fact this is largely impracticable, because not every voter has the political prudence required of a ruler. But he can dispose himself by ridding himself of the private vices of greed, cowardice, and hatred which hinder the operation of a general virtue. He can try to vote conscientiously without regard to rancour or private interest. And each member of the community can develop social justice *participatively* by obeying the laws, acting justly in private matters, and referring all his social actions to the moral well-being of the society."

Now really, this is not much help: eradication of private vice, conscientious voting, obedience to laws, particular justice, and a good intention, are hardly that "wider and sounder understanding of the

precise nature" of the obligations and acts of social justice for which Dr. Shields himself asks with such abundant reason. After the publication of the Encyclical of Pius XI *Divini Redemptoris* no one can approach this problem without giving most careful attention to paragraphs 51 to 54 of that document, of which the following very incomplete quotations will indicate the general drift of the argument:

> In reality, besides commutative justice, there is also social justice, *with its own set obligations* . . . it is impossible to care for the social organism and the good of society as a unit unless each single part and each individual member . . . is supplied with all that is necessary for the exercise of his *social functions*. . . . Then only will the economic and social order be soundly established and attain its ends, when it offers, to all and to each, all those goods which the wealth and resources of nature, technical science, and the corporate *organization of social affairs* can give. . . . It happens all too frequently, however, under the salary *system*, that individual employers are helpless to insure (commutative) justice unless, with a view to its practice, they *organize institutions*. . . . Where this is true it is the duty of contractors and employers to support and promote such *necessary organizations* as *normal instruments enabling them to fulfill* their obligations of (commutative) justice. . . . If, therefore, we consider the *whole structure* of economic life, as we have already pointed out in our Encyclical *Quadragesimo anno*, the reign of mutual collaboration of justice and charity in social and economic relations can *only* be achieved by a body of professional and interprofessional *organizations*. . . . (Italics and parentheses added).

The concept of legal justice suffered seven centuries of partial eclipse after St. Thomas' masterly analysis largely because all discussion was limited to the formal object: it was the virtue which had "for direct object, the common good," and was not further analyzed to clarify certain aspects which St. Thomas deliberately left undetermined by limiting himself to figurative language ("quasi architectonice in principe; quasi administrative in subditis"). A glance now at the italicized passages in the above quotation (organization, institutions, system, structure) will show how boldly Pius XI set out to break through this figure to the living reality. It would be tragic to miss the point after so obvious a suggestion from the supreme teaching authority of the Church; but how easy it will be to miss the point is the moral to be drawn from Dr. Shields very traditional answer to this own very acute and penetrating question.

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Spirit in Man. By RUFUS M. JONES. (Foreword by David E. Trueblood). Stanford University Press, 1941. Pp. x + 70.

Afforded the occasion by the West Lectureship, Rufus Jones, in three lectures on the '*Spirit in Man*,' given at Stanford University to note the "opening of the year of celebration marking the completion of Stanford's first half century" (v), expresses his thought concerning the immortality of the human soul. The main trend of this writing can best be expressed in the author's own words: "We shall not expect to be immortal until we discover something in us that is infinitely precious and eternally worthy to be conserved in a realm to which we inherently belong—the Over-World of Spirit" (64). Accordingly he seeks a unique reality in us—the 'spirit'—and shows that this participates in intrinsic values that not only "involve a peculiar type of mind on the subjective side," but "equally involve a peculiar kind of world on the objective side" (57). The conclusion of his investigation is: if there is this unique reality in us; if it participates in intrinsic values; and "if there is an Over-World of Spirit which is the ultimate Reality of the Universe, the conservation of personality presents no insuperable difficulty, though it is true that we cannot demonstrate it, as we can demonstrate eclipses" (66).

Consequently, in his first lecture—'*The Uniqueness of Spirit in Man*'—he seeks "something in man that is unique, non-material, and worthy to be conserved" (25). This he finds to be the 'spirit,' "an integral, self-identical self, which knows what it knows and does what it does," which "is or at least can become, a highly complex spiritual reality, with a sphere and range of its own" (21-22). In his second lecture—'*Goods that are Good without any Qualification*'—he considers those "great spiritual realities" which "'break through'" (33) into our world of experience. They are: "the intrinsic values of Beauty, or of moral Goodness which ought to be, or of Truth which is eternally, inevitably true, or of Love for Love's sake" (57). And thus, in his third and last lecture—'*Intimations of an Over-World of Reality*'—he attempts to show that these "values which enrich our world of experience in times of high visibility at least bring with them implications of a Source that fits their unique status of reality" (53), implications of "an Over-World of higher order than the one we see and touch and describe" (46). "If we are to have an immortal destiny," the author tells us, "there must be some such Over-World to which we may belong and in which we may find our fulfillment of life" (46).

The author does not presume to have decisevely settled the issue; he merely seeks "to indicate that there are no impossibilities to force us into a negation of hope" (68). In his last lecture he brings in three reasons why there has been a decline of faith in the immortality of the soul. According to him they are: 1) "widespread depression of the value and significance of human life itself . . . tendency to reduce it to a horizontal biological process" (63); 2) lack of "data with which to verify the hope" (64): 3) lack "of material by which we can visualize or imagine the conditions of such continued life" (65). But these three reasons of Rufus Jones can be reduced to one—the tyranny of the empirical sciences and the consequent negation of metaphysics. Indeed, since the supposed-to-be-learned men of the day refuse to accept that which they cannot dissect or examine under a microscope and search not for the ultimate realities that lie beyond the sensile substratum, it naturally follows that man is reduced to mere dust, to mere biological processes; that data is sought "with which to verify the hope" (64); that material must be shown them by which they "can visualize or imagine the conditions of such continued life" (65).

Though the author denounces the Cartesian dualism of mind and matter "as a bad legacy" (19), he seems to be imbued with the Platonistic dualistic conception of man. Indeed, he considers the body to be but a "good 'ally and consort' to man's spirit" (4). His first lecture is replete with hints that insinuate this dualism. More, he seems to identify the 'spirit' with the "conscious self," the "experiencing subject" (4), with that which knows itself as knowing. Surely this means the identification of the Ego, the I, the person, with the 'spirit.' The argumentation used by Rufus Jones in showing the reasonableness, or better still, the non-impossibility of immortality, seems to be based on the argumentation that Plato puts on the lips of Socrates in the memorable *Phaedo*.

We may truly say that these three lectures constitute a sincere and earnest effort to demonstrate that belief in the immortality of the soul is not contrary to reason; and the author deserves great praise for his noble attempt. The terminology, of course, is strange to scholastic ears. His style, though logical, is true to our age in lacking the secret charm of clarity, conciseness and simplicity—the gift of a truly wise man.

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Criminology. A Scientific Study of the Modern Crime Problem. By Eligius Weir, O. F. M. Joliet, Ill.: Institute for the Scientific Study of Crime, 404 North Hickory Street, 1941. Pp. xx + 329. $3.00.

The timeliness of this book should ensure for it wide interest, especially among Catholic educators and sociologists. Coming as it does in the centennial year of the American probation system, it serves to draw attention to the fact that Catholic chaplains in jails and prisons are doing heroic work among the outcasts of society, although their habitual reticence in speaking and writing of their job precludes its proper evaluation by the public at large. If this book did nothing more than record the chaplains' approach to the problem of crime in America today it would be worth the printing.

Although written in an objectively didactic manner, it is in fact an intensely human document which amounts to a piece of special pleading for the improvement of our whole system of dealing with delinquents. The author explains in detail all that he has learned in fifteen years of conscientious devotion to the problem of men in prisons and how they got there. Ranging from consideration of underprivileged neighborhood groups, through disease, to fingerprinting and lie detectors, he describes each factor which leads up to finding boys in the toils of the law and afterwards he explains the differences between parole and probation and the other devices for getting them out again and rehabilitating them in society. His unsparing criticism of the conditions these unfortunates have to suffer, though stated in generalities to avoid specific condemnation of persons in authority, is a grave indictment of the smugness and hypocrisy with which contemporary society dismisses the problem of crime.

Primarily designed to be informative and expository of modern methods, the book devotes comparatively little space to theories about punishment and their philosophic soundness. On the contrary, the author seems to accept the best features of modern penological methods and work them in with his own training in moral theology to form a pattern for practical action. And because he has the unique opportunity of using a large modern prison for his laboratory, the conclusions he arrives at empirically cannot fail to be of interest from the standpoint of a neo-Scholastic philosophy of law. Briefly, his experience seems to indicate that the Thomistic doctrine on punishment as an effect of law is fundamentally sound in practice, and that deprivation of the desirable

as individually ascertained, is a better basis for sentencing a convict than severity or vindictiveness in achieving justice. Only once does he differ from St. Thomas when he decides that, at least in modern times, capital punishment is unjustifiably exercised, even though it may properly be included among the prerogatives of the state. On the other hand, when he comes to offer suggestions for the improvement of penological methods, he places his confidence chiefly in legislation, in civil service and professional training for prison, parole, and probation officials, and in centralization of enforcement agencies under the federal government. The implied indictment, indeed the expressed condemnation of the legal profession,—courts, lawyers, and judges, besides bondsmen and juries, for malfeasance and nonfeasance is somewhat appalling. But the reform which these recommendations advocate, it is submitted, is contrary to the principles which a neo-Scholastic analysis of the theory of the Common Law would seem to indicate as correct. The traditional common law method of preserving human liberties places responsibility in judging rather than in legislating, and when cooperative action is called for across state lines, the enactment of uniform state laws with its reliance on local autonomy and self-government is more in accordance with the genius of the Common Law than the centralization which is characteristic of continental countries. Admittedly in the decadent days of the Common Law, after the true philosophical principles which gave it birth had been forgotten, unChristian cruelties marked its enforcement. When the movement for reform came, scarcely more than a hundred years ago, it was formulated by the indefatigable Jeremy Bentham, whose influence has dominated penal reform movements since. The grandeur of Bentham's purpose is undeniable, but his admitted debt to Voltaire and Beccaria, together with his adoption of some of the philosophic fallacies of Hobbes, Locke, and Hume, has given a positivistic character to American criminological literature which the importation of the ideas of Ferri and Lombroso and even of Saleilles and Tarde have tended to augment. Further consideration is necessary before accepting the Benthamite solutions as a whole in place of the traditional Common Law methods.

Originally crime was a legal problem, but one which the law has so far failed to solve. There is no assurance that sociologists will ultimately be more successful unless they understand the philosophy behind the law. More than anything else, this book shows the need for rethinking practical legal problems in the light of sound metaphysics. And phi-

losophy will not have fulfilled its duty to law until it has multiplied studies like Friel's on punishment, Kreilkamp's on the metaphysical foundations of Thomistic jurisprudence, and the present reviewer's on the sanction of law—all in the Catholic University Philosophical Series—so that the lawyers, judges, and publicists who come from Catholic law schools in the future will not be deprived, as they have been in the past, of a knowledge of their legal heritage to the point of aiding its eclipse instead of its improvement. Besides the need for an adequate philosophy of law to which this book bears witness, studies in the economic causes of crime and their cure are a current need in view of the insistence of the Marxist thesis, and researches in the therapeutic value of prison libraries, especially from the Catholic standpoint, would also be very desirable. And for the history of law, Zane's—the only one listed by the author—is inadequate. In fact comparative studies are needed covering the penal methods of the Papal states, Oakley's work on the English and Irish penitential disciplines, and the treatment of delinquents under Canon Law. In publishing this book, Father Weir has shown the way for a new line of studies to which Catholic students in America must contribute if they would take their proper place in arresting and curing the cancerous growth at the heart of civilization to which our crowded prisons bear witness.

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The Psychology of the Interior Senses. By MARK A. GAFFNEY. St. Louis: B. Herder Book Co., 1942. Pp. 260.

It is very desirable that the conceptions of traditional psychology be restated in such a manner as to be understandable also to readers not fully acquainted with the terms and ideas of the Schools. Such a restatement might convince many of the mistakes they make in their appreciation of traditional psychology. Most psychologists, experimentalists and theoreticians, hold quite erroneous views in regard to the Scholastic psychology. What they criticize is usually not at all what they believe to attack; they address their criticisms not to the teachings of Scholasticism, but to an unreal and preposterous phantom. A better acquaintance with Scholasticism might possibly prove that there is more to be found, even for a modern psychologist, in these old ideas than one suspects as long as one remains ignorant of the facts.

The notion of "internal senses" is probably one of the most misunderstood. It shares this fate, perhaps, with only one other notion, namely the notion of the "faculties." It should therefore be welcomed that the internal senses are discussed in a special work. This book, however, does not fulfill the hope that a thorough and convincing treatment of the matter of the internal senses be given.

There are two main reasons why this book is disappointing. One is the disregard of modern psychology. Rather than using the vast material accumulated by the patient researches of the experimentalists, the author prefers to refer to secondhand sources and to illustrating stories. However, there is much in modern psychology which, if closely and critically examined, offers strong proofs for the usefulness and the truth of the traditional conceptions. The analysis of *Gestalt* or configuration, especially the studies on apparent movement, and the studies on the perceptual process have discovered facts which are much better explained by the notion of the *sensus communis* than by any other theory. Many modern explanations, in fact, make use of the very notion, although they may not employ, or even know, the term. Pathology too has revealed many facts which demand that an agent, like the *sensus communis*, be assumed. (Dom Th. V. Moore's *Cognitive Psychology* contains a good summary of most of the pertinent facts.)

The second reason is a rather unfortunate terminology which, indeed, is not this author's only, but is often used. It is a mistake to identify the *vis aestimativa* with "instinct" in the modern sense of the word. The *vis aestimativa* supplies, in the whole of instinctual behavior, only the cognitive part. The data of this power become *instinctus*, that is a releasing agent, for the sensitive appetite. But instinct as used in today's biology and psychology comprises much more than what Aquinas understood by the term.

This mistaken identification makes the author totally overlook that in man the fourth of the internal senses is called also *ratio particularis*, and that its achievements go far beyond anything strictly instinctual. One cannot treat of the *vis cogitativa* without considering the ideas of the *continuatio intellectus ad cogitativam* and the co-operation of the rational and sensory power in the formation of particular judgments. Of this, no mention is made in the book.

Incidentally, the habit of quoting *De potentiis animae* as a work of Aquinas should be abandoned. It is well known that this *opusculum* is spurious and written long after Aquinas's days.

Besides these fundamental defects, there are several minor things which seem objectionable. Physiology has by far not given up the method of exstirpation or destruction of brain regions in the study of localization (p. 45). It is hardly possible to say that similarity is the foundation of universal ideas (p. 65); this amounts to confusing generalization with abstraction. The universal nature of a thing can be abstracted, by principle, from one single instance, even though we usually base our abstractive process on a phantasm summarizing more than one experience. It is doubtful whether the "ringing of the ear" after a loud detonation is a true afterimage (p. 75); auditory afterimages are a controversial problem.

Because of the two fundamental defects mentioned above, this book does not achieve what it sets out to do. This is regrettable because it contains many good and useful remarks, and might well have served as an introduction in this particular chapter of psychology.

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Sachsenspiegel and Bible. By GUIDO KISCH, J. U. D. Notre Dame, Ind.: 1941. Pp. ix + 198, plates. (Publications in Medieval Studies, V, The University of Notre Dame, Philip S. Moore, C.S.C., Editor.) $3.25.

This book has for a sub-title: "Researches in the source history of the Sachsenspiegel and the influence of the Bible on Medieval German Law." The author is a Jewish refugee scholar who has devoted much study to the sources of German law. Recognizing in the phraseology of the *Sachsenspiegel* certain phrases which had a familiar biblical sound, he undertook a systematic study of the work with the purpose of discovering whether and to what extent the Bible might be considered one of its sources. Of course it is the Old Testament which is the real basis for the comparative study which this author makes. A Christian scholar, more familiar with the New Testament and the writings of the Fathers and the Doctors of the Church, who could read the *Sachsenspiegel* against its milieu of Christian literature, could make an even more convincing case for the Bible as a source of German law. But the unhappy fact remains that no such scholarly research has been undertaken from the Christian standpoint. And it is therefore a very important contribution that this author makes to comparative legal, phi-

losophical, and literary fields, not only through the originality of his viewpoint but also through the objectivity of his industrious researches. His work, coming as it does from a disinterested source, gives welcome and corroborative evidence of the interdependence of religion and law which Christian writers proclaim but have rarely undertaken to document by the utilization of the best critical methods.

The significance of the work for the Christian background of modern law lies in the fact that the *Sachsenspiegel* was one of those books which are characteristic of the thirteenth century above all others, and which are known by the generic title of a *Speculum* or Mirror. The country of the Germans knew a *Deutschenspiegel* and a *Schwabenspiegel* as well as a *Sachsenspiegel* among their law books. England and the Common Law knows the *Mirror of the Justices,*—of which an edition was published under the direction of the first Dean of the Catholic University of America School of Law, William Callyhan Robinson, as recently as 1903. And the history of Christian education knows the *Speculum Magis* of the Dominican scholar, St. Vincent of Beauvais, as one of the first encyclopedic presentations of the sum of Christian learning. "Mirrors," compiled from private or unofficial sources, were as representative of secular learning as the great *Summae* of the thirteenth century were of the theological and philosophical learning, and not until the law books of the Spieglers are read, like the *Speculum* of St. Vincent, in the spirit of the *Summae*, will the modern legal mind be able to grasp again the real meaning of the great legal tradition of which his current casebooks are the apogee. But to attain that understanding, the legal scholar must for the most part rely for his texts and translations upon specialists in medieval history and literature. To the extent that they, together with the historians of the Canon Law and of the Christian sources of Roman Law, collaborate in bringing to light the sources of modern legal doctrines, our contemporary jurisprudence can be improved and enriched.

That some collaboration, or at least an exchange of findings is necessary in these overlapping fields of study is obvious when it is recalled that the author of the *Sachsenspiegel,* Eike von Repgau (1180-1233), was also the author of the *Anglo-Saxon Chronicle.* Further, not only were the *Decretals* of Gregory IX compiled by St. Raymond Pennafort during his youth, but Eleanor of Guienne also proclaimed the *Laws of Oléron* for maritime affairs when he was a boy. He was alive, too, when Magna Carta was signed. And in the world of letters, the compo-

sition of Wolfram von Eschenbach's Parzifal epic, which also took place during his lifetime, is significant for the Christian basis of its inspiration. That Eike's work was in fact a mirror of a civilization which was both Christian and German,—inspired by, but not imitative of, Christian Rome, during at least the three or four centuries preceding, is best demonstrated by collections like that at the Germanic Museum at Harvard University, where the Christian character of the Saxon Renaissance at Hildesheim during Bishop Bernward's time—as Dr. F. J. Tschan's researches into that period disclose—but carries on the Gothic tradition in law and letters and art which flourished in Christian Spain before the Moslem conquest—as described in Dr. A. K. Ziegler's fine studies. That the present author discerns this through his allusions to St. Isidore of Seville as an additional source of the *Sachsenspiegel* is an indication of the correctness of his approach. In view of the excellence of the work he has done, it is a bit ungracious to ask for more, yet the fact remains, as he himself points out, that the field has scarcely been scraped. That he has not been able to go further than he has, is an indictment not of fault on his part but rather of the failure hitherto of Catholic scholars who know the traditions to make the true story of the sources of our modern law available to researchers. That Notre Dame University, through its *Publications in Medieval Studies* has already begun to bridge the gap by monographs as worthy as this one gives much promise, however, for the rightful future of American Catholic scholarship, in the important field of jurisprudence especially.

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